



# DOE-RFFO Environmental Restoration Program

Monthly Report  
for November 1994



December 20, 1994

DOCUMENT CLASSIFICATION  
REVIEW WAIVER PER  
CLASSIFICATION OFFICE

A-SW-001466

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## **EXECUTIVE SUMMARY**

### **SIGNIFICANT ACTIVITIES AND ACHIEVEMENTS FOR NOVEMBER 1994**

In Operable Unit (OU) 1, a stop work period was proposed under the provisions of the Interagency Agreement (IAG) Part 24 in October 1994. The stop work is necessary to resolve the procedural programmatic issue of approval of the Final Phase III Resource Conservation and Recovery Act Facilities Investigation / Remedial Investigation (RFI/RI) and to address the Colorado groundwater standards as Applicable or Relevant and Appropriate Requirements. On November 10, 1994, an agreement was reached with the regulatory agencies to defer the stop work period for two weeks to allow the Interagency Agreement (IAG) Project Coordinators another opportunity to address RFI/RI approval and closure issues. In addition, a proposal was created for the formation by the Dispute Resolution Committee of a dedicated cadre that would work toward a mutual agreement. This proposed Environmental Restoration Document Approval Group's cadre will consist of two key members from the Environmental Protection Agency (EPA), the Colorado Department of Public Health and Environment (CDPHE), and the Department of Energy (DOE). One of the members will be the Project Coordinator from each agency, who will devote eight hours per week for five weeks. The Environmental Restoration Document Approval Group's mission will support the environmental restoration program by conducting a focused evaluation of the review and approval approach for documents currently used under the IAG. The team is expected to consider alternative methods for the current approval approach, the relationship between documents, and the consultative process utilized in the IAG procedure. A meeting is planned for the week of December 12, 1994.

Because of the large number and complexity of comments on the Draft Corrective Measures Study/Feasibility Study (CMS/FS), on November 23, 1994, DOE requested a schedule extension of at least three months. An extension of 30 days was granted for OU 1 milestones, with an opportunity for future schedule extensions to be considered on a monthly basis.

The OU 2 Pilot Test Report for the Test Site Number 1 was delivered to the regulatory agencies on November 11, 1994.

A meeting was held on November 14, 1994, between the Jefferson County Open Space Commission and DOE to discuss the two proposed monitoring sites to be located within the OU 3 Open Space property. The Commission accepted the planned air and meteorological monitoring activities with the exception of the proposed air monitoring station site located near the southwest shoreline of Standley Lake. A site walk with Jefferson County personnel will be conducted to determine whether or not this location is acceptable.

Proposed adjusted OU 4 Phase I milestones were presented to the Joint Working Group for discussion. Generally, the group seemed agreeable to the duration of the milestone extensions which is typically six months. However, concern was expressed over the 13-month extension proposed for the "Start of Construction" milestone. The regulatory agencies requested additional information regarding advantages to be realized through inclusion of the extra scope, and this request has resulted in the need to extend milestones. This information was presented during the meeting of the Joint Working Group held on November 8, 1994.

Requested OU 4 milestone extensions were granted on November 23, 1994, by the regulatory agencies. The only deviation in the extension language was a change in the name of the "Start of Construction" milestone to "Start of Soil Excavation relative to IHSS 101 Closure." This extension approval allows the continuation of work on the placement of minimally treated pond sludge and pondcrete under the Phase I remediation engineered barrier. CDPHE is still reserving comment on whether it supports this work scope until after the public comment period.

The Final Industrial Area (IA) IM/IRA Decision Document and the Draft and Final Responsiveness Summary were delivered to the regulatory agencies on November 22, 1994, which is one day before the IAG due date of November 23, 1994. These milestones are the last IAG deliverables for this project.

A round table discussion with the regulatory agencies and DOE was held on November 3, 1994, to discuss the progress to date, assumptions, and documentation of results pertaining to OU 5 groundwater monitoring. The groundwater modeling activities continue, and the calibration runs with MODFLOW were completed. If toxicity information is not available from either the IRIS or HEAST databases, a request was made that the toxicity information be provided for all the OU 5 contaminants of concern. A one-page table was submitted to the regulatory agencies on November 14, 1994, that summarized the cases where the potential contaminants of concern were not found in either database.

# **IAG PERFORMANCE INDICATORS FOR MONTHLY REPORT**

| <u>Number of IAG Table Six Milestones To Date</u> | <u>Current Fiscal Year (FY) 95</u> |                            |
|---|------------------------------------|----------------------------|
|   | <u>(10/1/94 - 9/30/95)</u>         | <u>Since IAG Inception</u> |
| Scheduled (including approved extensions)         | 6                                  | 133                        |
| Met   | 4                                  | 101                        |
| Extensions Granted                                | 6                                  | 55                         |
| Extensions Denied                                 | 0                                  | 8                          |
| Remaining this FY 94 (to 9/30/94)                 | 37                                 | n/a                        |
| Added   | 1                                  | 11                         |
| Deleted   | 1                                  | 5                          |

| <u>Deliverables in Review by Regulators</u> | <u>Project</u>   | <u>Date Submitted/Completed</u> |
|---|--|---------------------------------|
|   | OU 1 Remedial Action Plan/<br>Proposed Plan                | 22 Nov 94                       |
|   | Revisions to OU 1<br>Phase III RFI/RI Report               | 15 Jun 94                       |
|   | OU 2 (Preliminary) Draft<br>Phase II RFI/RI Report         | 16 Dec 93                       |
|   | OU 4 Draft Proposed<br>Phase I IM/IRA Decision<br>Document | 27 May 94                       |
|   | OU 4 Draft Phase II<br>RFI/RI Work Plan                    | 27 May 94                       |
|   | OU 4 Final Phase II<br>RFI/RI Work Plan                    | 02 Sep 94                       |
|   | OU 15 Draft Phase I<br>RFI/RI Report                       | 25 Jul 94                       |

| <u>IM/IRA Status</u>  | <u>Gallons Treated</u> |
|---|------------------------|
| OU 1 881 Hillside Treatment   | 2,666,798 gallons      |
| OU 2 Surface Water IM/IRA Treatment                                       | 24,804,526 gallons     |
| OU 2 Subsurface IM/IRA Treatment (Soil Vapor Extraction)                  | 1,106 pounds           |
| OU 4 Water Management Tasks (Interceptor Trench<br>System and Pond Water) | 4,361,708 gallons      |

| <u>IAG Document Deliverables Due Next Six Months</u> | <u>IAG Approved<br/>Date</u> | <u>Current Projected<br/>Completion Date</u> | <u>Comments</u>                  |
|--|------------------------------|--|----------------------------------|
| OU 1 Corrective Design/Remedial Design Work Plan     | 01 Nov 94                    | 21 Dec 95                                    | Extension requested<br>submitted |
| OU 1 Final CMS/FS Report                             | 22 Dec 94                    | 24 Feb 95                                    | Additional delays<br>expected    |
| OU 1 Final Proposed Plan                             | 22 Dec 94                    | 20 May 95                                    | Additional delays<br>expected    |

| <u>IAG Document Deliverables Due Next Six Months</u>  | <u>IAG Approved Date</u> | <u>Current Projected Completion Date</u> | <u>Comments</u> |
|---|--------------------------|--|-----------------|
| OU 2 Draft Phase II RFI/RI Report   | 30 May 95                | 30 May 95                                | On schedule     |
| OU 4 Final Phase I Proposed IM/IRA  | 10 Feb 95                | 10 Feb 95                                | On schedule     |
| OU 4 All Solar Ponds Emptied of Water and Sludge  | 20 Jan 95                | 07 Jan 95                                | On schedule     |
| OU 7 Final Leachate Collection Responsiveness Summary and Interim Measure/Interim Remedial Action         | 08 Mar 95                | 08 Mar 95                                | On schedule     |
| OU 7 Release Final Leachate Collection Responsiveness Summary and Interim Measure/Interim Remedial Action | 22 Mar 95                | 22 Mar 95                                | On schedule     |
| OU 9 Draft Phase II RFI/RI Work Plan  | 10 mar 95                | 12 Aug 2005                              | Delayed         |
| OU 9 Draft Phase I Proposed IM/IRA Decision Document  | 01 May 95                | 30 Sep 2005                              | Delayed         |
| OU 10 Phase I Proposed IM/IRA Decision Document   | 26 May 95                | 26 Feb 2018                              | Delayed         |
| OU 10 Final Phase I RFI/RI Report   | 30 Jan 95                | 13 Apr 2000*                             | Delayed         |
| OU 13 Final Phase I RFI/RI Report   | 11 Jan 95                | 19 Feb 99*                               | Delayed         |
| OU 14 Draft Phase I RFI/RI Report   | 20 Dec 94                | 23 Apr 98*                               | Delayed         |
| OU 14 Final Phase I RFI/RI Report   | 23 May 95                | 06 Jan 99                                | Delayed         |
| OU 15 Final Phase I RFI/RI Report   | 04 Jan 95                | 04 Jan 95                                | On Schedule     |

| <u>Overdue Deliverables</u>               | <u>IAG Approved Planned Date</u> | <u>Current Projected Completion Date</u> | <u>Comments</u>             |
|---|----------------------------------|--|-----------------------------|
| OU 1 Corrective/Remedial Design Work Plan | 01 Nov 94                        | 21 Dec 95                                | Extension request submitted |
| OU 8 Draft Phase I RFI/RI Report          | 14 Feb 94                        | 22 Jul 2003*                             | Overdue                     |
| OU 8 Final Phase I RFI/RI Report          | 12 Jul 94                        | 06 Apr 2004*                             | Overdue                     |
| OU 9 Draft Phase I RFI/RI Report          | 11 Apr 94                        | 31 Jan 2005*                             | Overdue                     |
| OU 9 Final Phase I RFI/RI Report          | 06 Sep 94                        | 07 Jul 2005*                             | Overdue                     |
| OU 10 Draft Phase I RFI/RI Report         | 25 Aug 94                        | 07 Feb 2000*                             | Overdue                     |
| OU 12 Draft Phase I RFI/RI Report         | 20 Apr 94                        | 18 May 98*                               | Overdue                     |
| OU 12 Final Phase I RFI/RI Report         | 15 Sept 94                       | 22 Oct 98*                               | Overdue                     |
| OU 13 Draft Phase I RFI/RI Report         | 08 Aug 94                        | 08 Sep 98*                               | Overdue                     |

| <u>Extended Deliverables</u>                                  | <u>IAG Approved Planned Date</u> | <u>Current Projected Completion Date</u> | <u>Comments</u> |
|---|----------------------------------|--|-----------------|
| OU 4 Final Phase I Proposed IM/IRA Decision Document          | 10 Feb 95                        | 10 Feb 95                                | See footnote 1  |
| OU 4 IM/IRA Responsiveness Summary                            | 09 June 95                       | 09 Jun 95                                | See footnote 1  |
| OU 4 Phase I Final IM/IRA DD and Final Responsiveness Summary | 29 Aug 95                        | 29 Aug 95                                | See footnote 1  |
| OU 4 Final IM Title II Design                                 | 18 Dec 95                        | 18 Dec 95                                | See footnote 1  |
| OU 4 Start of Soil Excavation Relative to IHSS 101 Closure    | 28 Oct 96                        | 28 Oct 96                                | See footnote 1  |

\* According to the Tolling Agreement, the OU 2 and the Industrial Area OUs have until January 31, 1995, to renegotiate new dates. According to the current schedule, the dates that are written in the Current Projected Completion Date column are the anticipated dates.

<sup>1</sup>New milestone dates were accepted by the regulatory agencies and DOE/RFPO on November 23, 1994.

## PROBLEMS AND PROGRAMMATIC ISSUES

As of November 22, 1994, prior to the deliverable date, official documents specified that two IAG milestones for OU 1 were due. These milestones were as follows: the Final Corrective Measures/Feasibility Study (CMS/FS) and the Draft Remedial Action Plan/Proposed Plan. Since an official approved extension had not been received before the deliverable date, it was assumed that these milestones were binding. The Draft Proposed Plan was delivered to the regulatory agencies on November 22, 1994.

Because of the very large number and complexity of comments on the Draft CMS/FS and the procedural and programmatic nature of many of the comments, submission of the Final CMS/FS on November 22, 1994, was not possible. Comments were originally due October 7, 1994, but were not received until November 1, 1994, which is 16 working days after the due date. Although at least a three-month schedule extension was requested by DOE, the regulatory agencies will grant sufficient time to meet the milestones. If the necessary time is not granted, DOE is prepared to meet the December 22, 1994, milestone date.

Active tanks in OU 9 continue to be a major issue between DOE and CDPHE. The DOE is still attempting to get a resolution to this problem, and the CDPHE approval of work contained in the Field Sampling Plan was already submitted without going to dispute resolution. DOE continues to attempt to resolve issues with CDPHE concerning the tanks T-8, T-9, T-24, and T-32. A letter from DOE was sent to CDPHE on October 20, 1994, to resolve this issue. A response has been received and is currently under evaluation.

To minimize schedule delays, efforts are in progress to subcontract the portion of the OU 9 Outside Tank Investigation that the CDPHE did not dispute. If the approval of TM #1, *Field Sampling Plan - Original Process Waste Lines - Volume 1, Part A, Outside Tanks*, does not occur in approximately three months, the subcontractor's proposal will be withdrawn and a new proposal will be needed. Even if approval is granted in the next three months, delays may occur because of scheduling conflicts.

The complete analytical results from this summer's field investigation in OU 11 have not been received yet. The accelerated milestone may be affected by the slippage if 100 percent of the analytical results for OU 11 have not been received by December 5, 1994.

EPA has not officially commented on the Draft Phase I RFI/RI Report submitted on July 25, 1994, but preparation of the Final Phase I RFI/RI Report for OU 15 is continuing without those comments. For the comments to be official, they must be received by DOE from CDPHE as the lead agency for OU 15.

Negotiations supporting the development of the Rocky Flats Cleanup Agreement and the associated Cleanup Work Plan ceased on November 3, 1994, because an agreement was not reached between the regulatory agencies and DOE on the removal action authority and the final dispute authority impacting the remedial milestones.

Current information indicates that the Rocky Flats Compliance Agreement will not be negotiated before the expiration of the Tolling Agreement on January 31, 1995. It is conceivable that DOE will then begin accruing stipulated fines and penalties associated with the remaining Table 6 IAG milestones.

# NEAR-TERM IAG TABLE SIX MILESTONES

| <u>OU #</u> | <u>IAG</u><br><u>Milestone Description</u>   | <u>Date Scheduled</u><br><u>to EPA/CDPHE</u> | <u>Status</u>                      |
|-------------|--|--|------------------------------------|
| 8           | Submit Draft Phase I RFI/RI Report   | 14 Feb 94                                    | Tolling Agreement - overdue*       |
| 9           | Submit Draft Phase I RFI/RI Report   | 11 Apr 94                                    | Tolling Agreement - overdue*       |
| 12          | Submit Draft Phase I RFI/RI Report   | 20 Apr 94                                    | Tolling Agreement - overdue*       |
| 8           | Submit Final Phase I RFI/RI Report   | 12 Jul 94                                    | Tolling Agreement - overdue*       |
| 13          | Submit Draft Phase I RFI/RI Report   | 08 Aug 94                                    | Tolling Agreement - overdue*       |
| 10          | Submit Draft Phase I RFI/RI Report   | 25 Aug 94                                    | Tolling Agreement - overdue*       |
| 9           | Submit Final Phase I RFI/RI Report   | 06 Sep 94                                    | Tolling Agreement - overdue*       |
| 12          | Submit Final Phase I RFI/RI Report   | 15 Sep 94                                    | Tolling Agreement - overdue*       |
| 1           | Submit Corrective Design/Remedial<br>Design Work Plan  | 01 Nov 94                                    | Extension request submitted        |
| 1           | Submit Final CMS/FS Report   | 22 Dec 94                                    | Additional delays expected         |
| 14          | Submit Draft Phase I RFI/RI Report   | 20 Dec 94                                    | Tolling Agreement - delayed*       |
| 15          | Submit Final Phase I RFI/RI Report   | 04 Jan 95                                    | On schedule                        |
| 13          | Submit Final Phase I RFI/RI Report   | 11 Jan 95                                    | Tolling Agreement - delayed*       |
| 4           | All Solar Ponds Emptied of Water<br>and Sludge   | 20 Jan 95                                    | Ahead of schedule                  |
| 10          | Submit Final Phase I RFI/RI Report   | 30 Jan 95                                    | Tolling Agreement - delayed*       |
| 4           | Submit Final Phase I Proposed IM/IRA<br>Decision Document  | 10 Feb 95                                    | On schedule                        |
| 1           | Submit Final Proposed Plan   | 27 Mar 95                                    | Additional delays expected         |
| 7           | Final Leachate Collection Responsive-<br>ness Summary and Interim Measure/<br>Interim Remedial Action      | 08 Mar 95                                    | On schedule                        |
| 9           | Submit Draft Phase II RFI/RI Work Plan   | 10 Mar 95                                    | Tolling Agreement - delayed*       |
| 7           | Release Final Leachate Collection<br>Responsiveness Summary and Interim<br>Measure/Interim Remedial Action | 22 Mar 95                                    | On schedule                        |
| 9           | Submit Draft Phase I Proposed IM/IRA<br>Decision Document  | 01 May 95                                    | Proposed elimination               |
| 14          | Submit Final Phase I RFI/RI Report   | 23 May 95                                    | Tolling Agreement - delayed*       |
| 10          | Submit Draft Phase I Proposed IM/IRA<br>Decision Document  | 26 May 95                                    | Proposed elimination               |
| 2           | Submit Draft Phase II RFI/RI Report  | 30 May 95                                    | On schedule                        |
| 4           | Submit IM/IRA Responsiveness<br>Summary  | 09 Jun 95                                    | On schedule                        |
| 2           | Submit Corrective Design/Remedial<br>Design Work Plan  | 15 Jun 95                                    | On schedule                        |
| 6           | Submit Draft Phase I RFI/RI Report   | 21 Jun 95                                    | On schedule                        |
| 1           | Submit Draft Responsiveness Summary  | 24 Jul 95                                    | Additional delays expected         |
| 10          | Submit Draft Phase II RFI/RI Work Plan   | 27 Jun 95                                    | Tolling Agreement - delayed*       |
| 1           | Submit Draft Title II Design   | 05 Jul 95                                    | Extension date to be<br>determined |
| 11          | Submit Draft Phases (combined)<br>RFI/RI Report  | 20 Jul 95                                    | Ahead of schedule                  |
| 5           | Submit Draft RFI/RI Report   | 21 Jul 95                                    | On schedule                        |
| 4           | 904 Pad Storage Compliance   | 31 Jul 95                                    | On schedule                        |



| <u>OU #</u> | <u>IAG</u><br><u>Milestone Description</u>                                    | <u>Date Scheduled</u><br><u>to EPA/CDPHE</u> | <u>Status</u>                      |
|-------------|---|--|------------------------------------|
| 9           | Submit Final Phase II RFI/RI Work Plan  | 07 Aug 95                                    | Tolling Agreement - delayed*       |
| 11          | Submit Draft Phase II RFI/RI Work Plan  | 21 Aug 95                                    | On schedule                        |
| 4           | Phase I Final IM/IRA Decision<br>Document and Final Responsiveness<br>Summary | 29 Aug 95                                    | On schedule                        |
| 7           | Submit Draft Phase I Proposed<br>IM/IRA Decision Document                     | 31 Aug 95                                    | On schedule                        |
| 11          | Submit Final Phases (combined)<br>RFI/RI Report                               | 19 Sep 95                                    | On schedule                        |
| 2           | Submit Final Phase II RFI/RI Report   | 21 Sep 95                                    | On schedule                        |
| 1           | Final Responsiveness Summary  | 23 Oct 95                                    | Additional delays expected         |
| 1           | Draft CAD/ROD   | 23 Oct 95                                    | Additional delays expected         |
| 9           | Final Phase I Proposed IM/IRA<br>Decision Document                            | 27 Sep 95                                    | Tolling Agreement - delayed*       |
| 1           | Final Title II Design   | 03 Oct 95                                    | Extension date to be<br>determined |
| 11          | Draft Phase I Proposed IM/IRA<br>Decision Document                            | 10 Oct 95                                    | Proposed elimination               |
| 10          | Final Phase I Proposed IM/IRA<br>Decision Document                            | 24 Oct 95                                    | Tolling Agreement - delayed*       |
| 3           | Submit Draft Phase I RFI/RI Report  | 30 Oct 95                                    | On schedule                        |

- \* According to the Tolling Agreement, OU 2 and the Industrial Area OUs have until January 5, 1995, to renegotiate new dates.

## **SECTION 1. INTRODUCTION**

This monthly status report presents the current status and technical achievements of the Rocky Flats Environmental Restoration Program for November 1994. This program implements the Interagency Agreement (IAG) among the U. S. Department of Energy (DOE), the U. S. Environmental Protection Agency (EPA), and the State of Colorado to investigate, assess and remediate, where necessary, contaminated areas at or adjacent to DOE's Rocky Flats Environmental Technology Site near Golden, Colorado. This agreement was signed on January 22, 1991, and the work is being performed for DOE by EG&G Rocky Flats, Inc.

The Executive Summary of the report contains highlights of significant achievements, milestone information, and any major unresolved issues of the program. Technical progress, schedule status, and milestone status for each Operable Unit (OU), as well as other program activities, are presented in Section 2. Section 3 contains the schedules for routine environmental sampling as required by Paragraph 210 of the IAG. Section 4 contains a list that identifies the subcontractors performing work on the program as required by Paragraph 13 of the IAG.

## SECTION 2. PROJECT STATUS

## 2.1 OU 1 - 881 HILLSIDE AREA

The alluvial groundwater at the 881 Hillside Area, located north of Woman Creek in the southeast section of the Rocky Flats Environmental Technology Site, was contaminated in the 1960s and 1970s with solvents and radionuclides. The area is approximately two miles from the eastern, outer edge of the site's buffer zone at Indiana Street. The various Individual Hazardous Substance Sites (IHSSs) that make up OU 1 were investigated and treated as high-priority sites because of potentially elevated concentrations of organic compounds in the near-surface groundwater and the proximity of the contamination to a drainage system leading to an offsite drinking water supply. The selected Interim Remedial Action (IRA) at OU 1 involved construction of an underground drainage system called a French drain that intercepts and contains near-surface groundwater that flows from the OU 1 area. The near-surface water is treated at the 891 treatment facility, designed for this purpose, and is released onsite into the South Interceptor Ditch along Woman Creek. Water collected from this ditch undergoes a secondary analysis prior to release. IRA construction was completed in April 1992. A Resource Conservation and Recovery Act (RCRA) Facilities Investigation (RFI)/Remedial Investigation (RI) Report was completed in November 1993. To determine the final remedial action, the Feasibility Study (FS) continues parallel with the operation of the IRA.

### **2.1.1 OU 1 ASSESSMENT**

**Scope of Work Changes This Period** **None**

**Technical Approach** **None**  
**Changes This Period**

| IAG Milestone   | Submit Draft Phase III RFI/RI Work Plan         | 06 Feb 90 |
|-----------------|---|-----------|
| Accomplishments | Submit Final Phase III RFI/RI Work Plan         | 31 Oct 90 |
|                 | Submit Draft Phase III RFI/RI Report            | 28 Oct 92 |
|                 | Submit Final Phase III RFI/RI Report            | 05 Nov 93 |
|                 | Submit Revised Phase III RFI/RI Report          | 15 Jun 94 |
|                 | Submit Draft Corrective Measures Study (CMS)/FS | 25 Aug 94 |
|                 | Submit Draft Remedial Action Plan/Proposed Plan | 22 Nov 94 |
|                 |   |           |

### Future IAG Milestones Through FY 95

| <u>Milestone Name</u>                                      | <u>Planned Date</u> | <u>Approved Extension Status</u> | <u>Forecast Date</u> |
|--|---------------------|----------------------------------|----------------------|
| Submit Final CMS/FS Report                                 | 27 Sep 93           | 23 Dec 94                        | 04 Jan 96            |
| Submit Final Proposed Plan                                 | 04 Jan 94           | 27 Mar 95                        | 02 Jul 96            |
| Submit Corrective Design/Remedial Design Work Plan         | 01 Nov 94           |                                  | 21 Dec 95            |
| Submit Draft Responsiveness Summary                        | 06 May 94           | 24 July 95                       | 23 Jun 95            |
| Submit Final Responsiveness Summary                        | 03 Aug 94           | 23 Oct 95                        | 22 Sep 95            |
| Submit Draft Corrective Action Decision/Record of Decision | 03 Aug 94           | 23 Oct 95                        | 22 Sep 95            |

| <u>Milestone Name</u>  | <u>Planned<br/>Date</u> | <u>Approved<br/>Extension<br/>Status</u> | <u>Forecast<br/>Date</u> |
|--|-------------------------|--|--------------------------|
| Submit Final Corrective Action Decision/<br>Record of Decision | 01 Nov 94               | 22 Jan 96                                | 22 Dec 95                |
| Submit Draft Title II Design                                   | 05 Jul 95               |  | 23 Aug 96                |

#### **November Work Activity Status**

A stop work period was proposed under the provisions of the Interagency Agreement (IAG) Part 24 on October 24, 1994. The stop work is necessary to resolve the procedural programmatic issue of approval of the Final Phase III Resource Conservation and Recovery Act Facilities Investigation/Remedial Investigation (RFI/RI) and to address the Colorado groundwater standards as Applicable or Relevant and Appropriate Requirements. On November 10, 1994, an agreement was made with the regulatory agencies to defer the stop work period for two weeks to allow the IAG Project Coordinators another opportunity to address RFI/RI approval and closure issues. In addition, a proposal was created for a dedicated cadre, chartered by the Dispute Resolution Committee, to continue to work to resolve these issues through to a mutual agreement. This proposed Environmental Restoration Document Approval Group's cadre will consist of two key members from the regulatory agencies and DOE. One of the members will be the Project Coordinator from each agency, who will devote eight hours per week for five weeks. The Environmental Restoration Document Approval Group's mission will support the environmental restoration program by conducting a focused evaluation of the review and approval approach for documents currently used under the IAG. The team is expected to consider alternative methods for the current approval approach, the relationship between documents, and the consultative process utilized in the IAG procedure. The first meeting is planned for the week of December 12, 1994.

#### **Technical Memoranda (TM)**

##### Project

##### OU 1 - 881 Hillside

TM #10

TM Title

TM Status

Preliminary Remediation Goals

Submitted Final TM to DOE: 03 May 94

When preparation was concluded: 03 May 94

Projected date of submittal to EPA/CDPHE: Submitted

Actual date of submittal: 03 May 94

Date when comments were received: EPA 01 June 94, CDPHE 26 Jul 94

TM #11

TM Title

TM Status

Alternative Array

Submitted Draft TM to DOE: 03 May 94

When preparation was concluded: 03 May 94

Projected date of submittal to EPA/CDPHE: Submitted

Actual date of submittal: 03 May 94

Date when comments were received: EPA 24 May 94, CDPHE 06 Jun 94

#### **Planned Work for December**

- **Final Revised Remedial Investigation (RI)/Draft Corrective Measures Study/Feasibility Study (CMS/FS)**
  - The technical issue comments that EPA and CDPHE made on the Final Revised RFI/RI Report and the CMS/FS will continue to be resolved.

#### **Problems**

As of November 22, 1994, official documents specified that two IAG milestones for OU1 were due. These milestones were Submit Final the CMS/FS, and Submit the Draft Remedial Action Plan/Proposed Plan. Since an official approved extension had not been received before the deliverable date, it was assumed that these milestones were binding. The Draft Proposed Plan was delivered to the regulatory agencies on November 22, 1994.

Because of the very large number and complexity of comments on the Draft CMS/FS and the procedural and programmatic nature of many of the comments, submission of the Final CMS/FS on November 22, 1994, was not possible. Comments were originally due October 7, 1994, but not received until November 1, 1994. On November 23, 1994, an extension of 30 days was granted for OU1 milestones with an opportunity for future schedule extensions to be considered on a monthly basis. DOE has requested at least a three-month extension. However, with the complexity and quantity of issues presented from the comments, it is presumed that the regulatory agencies will grant the necessary time required to meet these milestones. If not, DOE is prepared to meet the December 22, 1994, milestone.

#### **Open Items**

None

#### **2.1.2 OU 1 REMEDIATION**

**Scope of Work  
Changes This Period**

None

**Technical Approach  
Changes This Period**

None

**IAG Milestone  
Accomplishments**

|  |           |
|--|-----------|
| Submit Draft Proposed Interim Measure (IM)/IRA Decision Document | 18 Sep 89 |
| Submit Proposed IM/IRA Decision Document                         | 06 Oct 89 |
| Submit Final IM/IRA Decision Document                            | 05 Jan 90 |
| Begin Phase I-A IM/IRA Construction                              | 15 Jan 90 |
| Restart Phase I-A IM/IRA Construction (after shutdown)           | 20 Jun 90 |
| Begin Phase I-B IM/IRA Construction (ahead of schedule)          | 28 Sep 90 |
| Submit IM/IRA Implementation Document                            | 22 Feb 91 |

|   |           |
|---|-----------|
| Begin Phase II-A IM/IRA Construction                  | 01 Apr 91 |
| Begin IM/IRA Testing                                  | 05 Aug 91 |
| Begin Phase II-B IM/IRA Construction                  | 03 Sep 91 |
| Complete IM/IRA Construction (891 Treatment Building) | 02 Mar 92 |
| Complete IM/IRA Construction (French drain)           | 13 Apr 92 |

**Future IAG Milestones  
Through FY 95**

None

**November Work Activity Status**

**Interim Measure/Interim Remedial Action (IM/IRA)  
Treatment Facility** - The infrastructure was completed on  
November 21, 1994.

Recovery of the collection well water into a portable storage tank commenced on November 9, 1994. Recovery by using the storage tank was delayed from November 4, 1994, because of inclement weather. As approved by the regulatory agencies, water from the 881 footing drain is no longer being treated but is being diverted to both the South Interceptor Ditch and the wetlands area.

|                                 |                   |
|---------------------------------|-------------------|
| Treated groundwater this month: | 15,716 gallons    |
| Total treated to date:          | 2,666,798 gallons |

**Planned Work for December**

- **Accelerated Cleanup** - Laboratory analysis of the hot spot field samples will continue throughout the month, and the analysis is expected to be completed in December 1994.
- **Interim Measure/Interim Remedial Action (IM/IRA)  
Treatment Facility** - Normal Operations.
- The development of alternate methods of transporting collection well water to the Water Treatment Facility, Building 891, will continue.

**Problems**

None

**Open Items**

None

## 2.2 QU 2 - 903 PAD, MOUND, AND EAST TRENCHES

The contamination at the 903 Pad and Mound areas is largely attributed to the storage of waste drums in the 1950s and 1960s that corroded over time and allowed hazardous and radioactive material to leak into the surrounding soil. Additional contamination may have resulted from wind dispersion during drum removal and soil movement activities. The East Trenches Area was used for disposal of plutonium- and uranium-contaminated waste and sanitary sewage sludge from 1954 to 1968. Two areas adjacent to the trenches were used for spray irrigation of sewage treatment plant effluent and these areas may have contaminants that were not removed by the treatment system.

Originally, the Surface Water IM/IRA collected seep and surface water contamination sources and then treated and discharged the effluent to the surface water drainage. Operation of the field-scale treatability unit for the South Walnut Creek drainage began in May 1991. The effectiveness of the treatment process was evaluated at three locations: the influent to the treatment facility, several points within the facility, and the discharge point. Approval was granted to discontinue collection of two of the three sources because of a small amount of contamination.

A second IM/IRA was established in late 1991. This Subsurface IM/IRA Plan/Environmental Assessment encompasses all of OU 2 and contains a description of the process to evaluate a remediation technology for removal of residual free-phase volatile organic compound contamination at OU 2. The volatile organic compound removal actions involve *in situ* vacuum-enhanced vapor extraction technology. The interim remedial action will provide information to aid in the selection and design of final remedial actions that address subsurface, residual free-phase volatile organic compound contamination at OU 2.

### 2.2.1 OU 2 ASSESSMENT

Scope of Work Changes This Period ☐ None

|  |      |
|--|------|
| Technical Approach Changes This Period | None |
|--|------|

|                                      |  |           |
|--------------------------------------|--|-----------|
| <b>IAG Milestone Accomplishments</b> | Submit Draft Phase II RFI/RI Work Plan (Alluvial)  | 21 Dec 89 |
|                                      | Submit Final Phase II RFI/RI Work Plan (Alluvial)  | 12 Apr 90 |
|                                      | Submit Draft Phase II RFI/RI Work Plan (Bedrock)   | 05 Feb 91 |
|                                      | Submit Final Phase II RFI/RI Work Plan (Bedrock)   | 02 Jul 91 |
|                                      | Submit Field Report for Detailed Soil Vapor Survey | 15 Dec 93 |
|                                      | Submit Preliminary Draft Phase II RFI/RI Report    | 16 Dec 93 |
|                                      |  |           |

## Future IAG Milestones Through FY 95

| <u>Milestone Name</u>              | <u>Planned Date</u> | <u>Approved Extension Status</u> | <u>Forecast Date</u> |
|------------------------------------|---------------------|----------------------------------|----------------------|
| Submit Draft Phase II RF/RI Report | 12 Mar 93           | 30 May 95                        | 17 Apr 95            |
| Submit Final Phase II RF/RI Report | 09 Aug 93           | 21 Sep 95                        | 27 Jul 95            |
| Submit Draft CMS/FS Report         | 04 Nov 93           | 19 Jul 96                        | 11 Apr 96            |
| Submit Final CMS/FS Report         | 10 May 94           | 19 Dec 96                        | 30 Aug 96            |

| <u>Milestone Name</u>                                       | <u>Planned Date</u> | <u>Approved Extension Status</u> | <u>Forecast Date</u> |
|---|---------------------|----------------------------------|----------------------|
| Submit Draft Proposed Plan                                  | 10 May 94           | 10 Jan 97                        | 13 Sep 96            |
| Submit Final Proposed Plan                                  | 09 Aug 94           | 25 Mar 97                        | 26 Nov 96            |
| Submit Draft Responsiveness Summary                         | 13 Dec 94           | 25 Aug 97                        | 06 May 97            |
| Submit Final Responsiveness Summary                         | 16 Mar 95           | 05 Dec 97                        | 08 Aug 97            |
| Submit Draft Corrective Action Decision/ Record of Decision | 16 Mar 95           | 05 Dec 97                        | 08 Aug 97            |
| Submit Final Corrective Action Decision/ Record of Decision | 15 Jun 95           | 03 Mar 98                        | 04 Nov 97            |
| Submit Corrective Design/ Remedial Design Work Plan         | 15 Jun 95           |                                  | 17 Apr 98*           |

- \* Completion date to be rescheduled because of the Human Health Risk Assessment stop work order.

**November Work Activity Status** Remedial Investigation - DOE comments are currently being incorporated into the Draft Final Exposure TM.

**Feasibility Study** -The Draft Final Corrective/Remedial Action Objectives TM, is being reviewed. The Corrective/Remedial Action Objectives TM includes both reasonable maximum exposure and central tendency risk-based preliminary remediation goals).

A proposal to complete the complex groundwater flow model for OU 2 has been submitted for consideration. Technical evaluation of the proposal is in progress. During the detailed analysis of alternatives, the groundwater model will be used. Additionally, a request for a proposal to perform the second phase of the CMS/FS, including the detailed analysis of remedial action alternatives, has been solicited.

The schedule for groundwater modeling efforts has been affected by a modification in scope. The CMS/FS schedule has been updated to reflect this critical change within the CMS/FS schedule.

#### Operable Unit 2 Closures - Other

##### **Treatability Studies**

**Removal of Actinides from the Soil** - A team meeting was held on November 30, 1994, to evaluate the scope of the Soil Washing Treatability Study Work Plan. The team is currently reviewing other Treatability Study Reports to ensure there is not duplication of efforts and that data are minimized. As a reference between the performance of and the application of a technology versus the type of waste stream on which the technology operates, a matrix is being developed from the Treatability Study Reports.

**High Gradient Magnetic Separation** - After incorporating the comments on the Draft Treatability Study Report, DOE received the Final Draft report on November 28, 1994.



**Physical Separation - The Final Physical Separation Treatability Study Report** was completed ahead of the scheduled November 12, 1994, which was the due date established by the regulatory agencies and the DOE.

**Annual Treatability Study Report** - Data from the Rocky Flats Environmental Database System Group that supports the Annual Treatability Study Report were reviewed, edited, and currently are being revised so that final tables of data can be incorporated into the second draft of the report. EG&G comments on the Draft Annual Treatability Study Report were incorporated into the second draft of the Annual Treatability Study Report, and DOE will receive the second draft on December 9, 1994.

## **Technical Memoranda**

### **Project**

### **OU 2 - 903 Pad, Mound, and East Trenches**

#### **TM #1**

##### **TM Title**

**Development of Corrective/Remedial Action Objectives (Draft Submittal in-process)**

##### **TM Status**

**When preparation was concluded: To be determined**  
**Projected date of Draft submittal to EPA/CDPHE: To be determined (Pending resolution of risk assessment methodology issues)**  
**Actual date of Draft submittal: To be determined**  
**Date comments were received: To be determined**

#### **TM #2**

##### **TM Title**

##### **TM Status**

**Screening of Alternatives (Draft Submittal in-process)**  
**When preparation was concluded: To be determined**  
**Projected date of Draft submittal to EPA/CDPHE: To be determined**  
**Actual date of Draft submittal: To be determined**  
**Date comments were received: To be determined**

#### **TM #4**

##### **TM Title**

##### **TM Status**

**OU 2 Subsurface IM/IRA Soil Vapor Extraction Pilot Test Site 1 (Draft Submittal)**

**When Draft preparation was concluded: 08 Sep 94**  
**Projected date of Draft submittal to DOE: 30 Jul 94**  
**Actual date of Draft submittal: 24 Oct 94**  
**Date comments were received: 10 Nov 94**

#### **TM #5**

##### **TM Title**

##### **TM Status**

**Exposure Scenarios**

**When preparation was concluded: 15 Jan 93**  
**Projected date of submittal to EPA/CDPHE: 15 Jan 93**  
**Actual date of submittal: 15 Jan 93**  
**Date comments were received: 11 Feb 93 EPA, 12 Mar 93 CDPHE**

TM #6  
TM Title  
TM Status

Modeling  
When preparation was concluded: 15 Jan 93  
Projected date of submittal to EPA/CDPHE: 15 Jan 93  
Actual date of submittal: 15 Jan 93  
Date comments were received: 01 Apr 93 EPA, 31 Mar 93 CDPHE

TM #7  
TM Title  
TM Status

Surficial Soils  
When preparation was concluded: 07 Jan 93  
Projected date of submittal to EPA/CDPHE: 07 Jan 93  
Actual date of submittal: 12 Jan 93  
Date comments were received: 21 Jan 93  
TM Approved

TM #8  
TM Title  
TM Status

Bedrock  
When preparation was concluded: 15 Mar 93  
Projected date of submittal to EPA/CDPHE: 01 Mar 93  
Actual date of submittal: 15 Mar 93  
Date comments were received: 14 Apr 93 EPA,  
14 Apr 93 CDPHE  
TM Approved

TM #8 Addendum  
TM Title  
TM Status

Contingency Plan for revised Phase II RFI/RI Work Plan (Bedrock)  
When preparation was concluded: Jun 93  
Projected date of submittal to EPA/CDPHE: Jun 93  
Actual date of submittal: Jun 93  
Date comments were received: FY 93

TM #9  
TM Title  
TM Status

Chemicals of Concern  
When preparation was concluded: 08 Aug 94  
Projected date of submittal to EPA/CDPHE: 03 Oct 94  
Actual date of Draft submittal: 02 Sep 94  
Date comments were received: 05 Oct 94  
TM Approved

TM #10  
TM Title  
TM Status

Toxicity Assessment  
When preparation was concluded: 09 Aug 94  
Projected date of submittal to EPA/CDPHE: 30 Aug 94  
Actual date of Draft submittal: 02 Sep 94  
Date comments were received: 05 Oct 94  
TM Approved

TM #11  
TM Title  
TM Status

Exposures Scenario (Draft submittal)  
When preparation was concluded: 21 Oct 94  
Projected date of submittal of Draft to EPA/CDPHE: 31 Oct 94

Actual date of submittal of Draft: 03 Nov 94

Date comments were received: 17 Nov 94

**Planned Work for December**

- Work will continue on the Risk Assessment, the Treatability Studies, the FS, and the IM/IRA will continue operation.

**Problems**

None

**Open Items**

None

**2.2.2 QU 2 REMEDIATION**

**Scope of Work**

None

**Changes This Period**

**Technical Approach**

None

**Changes This Period**

**IAG Milestone**

**Accomplishments**

|  |            |
|--|------------|
| Submit Draft Proposed IM/IRA Decision Document       | 19 Jun 90  |
| Submit Proposed Plan IM/IRA Decision Document        | 18 Sep 90  |
| Submit Draft Responsiveness Summary                  | 13 Dec 90  |
| Submit Final Responsiveness Summary                  | 11 Jan 91  |
| and Final IM/IRA Decision Document                   |            |
| Field Treatability Test System Installation Complete | 10 May 91  |
| Begin Field Treatability Testing (Carbon System)     | 03 May 91  |
| Submit Draft Treatability Test Report                | 01 Apr 92  |
| (Phase I Granular Activated Carbon)                  |            |
| Complete IM/IRA Construction                         | 24 Apr 92  |
| (radionuclides removal system)                       |            |
| Begin Field Treatability Testing                     | 27 Apr 92  |
| (radionuclides removal system)                       |            |
| Submit Final Treatability Test Report                | 02 Jun 92  |
| (Phase I Granular Activated Carbon)                  |            |
| Submit Subsurface Site I Draft Test Plan             | 29 Oct 92  |
| Submit Subsurface Site I Final Test Plan             | 12 Jan 93  |
| Submit Draft Surface Water Field                     | 13 Jul 93  |
| Treatability Report                                  |            |
| Submit Subsurface Site 2 Draft Test Plan             | 06 July 94 |
| Submit Final Phase II Treatability Study Report      | 26 Jan 94  |
| Begin Subsurface IM/IRA Test I                       | 14 Feb 94  |

**Future IAG Milestones  
Through FY 95**

| <u>Milestone Name</u>                      | <u>Planned<br/>Date</u> | <u>Approved<br/>Extension<br/>Status</u> | <u>Forecast<br/>Date</u> |
|--|-------------------------|--|--------------------------|
| Submit Draft Pilot Test Report Site 1      | 28 Oct 94               | 11 Nov 94                                | 10 Nov 94                |
| Submit Final Pilot Test Report Site 1      | 20 Dec 94               | 11 Jan 95                                | 11 Jan 95                |
| Submit Final Pilot Test Plan Site 2        | 06 Jul 94*              | 13 Jan 95                                | 13 Jan 95                |
| Start-up Soil Vapor Extraction Test Site 2 | 31 May 95*              | 25 Apr 95                                | 25 Apr 95**              |

| <u>Milestone Name</u>                 | <u>Planned<br/>Date</u> | <u>Approved<br/>Extension<br/>Status</u> | <u>Forecast<br/>Date</u> |
|---------------------------------------|-------------------------|--|--------------------------|
| Submit Final Pilot Test Report Site 2 | 30 Apr 96*              | 01 Sep 95                                | 03 Sep 95                |
| Submit Draft Pilot Test Plan Site 3   | 31 Mar 95 *             | 24 Jan 95                                | 24 Jan 95                |
| Complete Pilot Unit 3 Installation    | 31 Oct 96*              | 15 Sep 95                                | 15 Sep 95                |
| Submit Draft Pilot Test Report Site 3 | 30 Sep 97*              | 01 Mar 96                                | 01 Mar 96                |
| Submit Final Pilot Test Report Site 3 | 31 Oct 97 *             | 23 Apr 96                                | 23 Apr 96                |

\* Based on proposed/actual schedule dates and subsurface IM/IRA durations.

\*\* Assumes lease of off-gas treatment system.

#### **November Work Activity Status      Subsurface IM/IRA Operations Soil Vapor Extraction**

**Test Site No. 1** - Most of the data from the liquid and soil sample analyses performed for the trench characterization have been received. A laboratory procedure for sample preparation for the petroleum distillation is being written by an offsite laboratory.

A presentation of the technical justification to end the Subsurface Interim Measure/Interim Remedial Action (IM/IRA) to the regulatory agencies was prepared. The presentation will be given to the regulatory agencies on December 7, 1994.

**Volatile Organic Compound Removal** - The Soil Vapor Extraction Post Pilot (Extended) Operations volatile organic compound removal activities included the following:

|   |              |
|---|--------------|
| Pounds of volatile organic compounds removed this month:    | 129.5 pounds |
| Total pounds of volatile organic compounds removed to date: | 915.3 pounds |

**Test Site No. 2** - The majority of the work related to Test Site No. 2 remains on hold pending results of a presentation to the regulatory agencies on December 7, 1994. Only selected activities are being completed.

**Test Site No. 3** - Work on Test Site No. 3 remains on hold. DOE is considering an accelerated action at the Individual Hazardous Substance Site (IHSS) 110, the location of the free phase non-aqueous phase liquids.

**Surface Water IM/IRA Operations** - The Sample and Analysis Plan is currently being revised to incorporate comments received from EG&G. DOE will review the Sample and Analysis Plan in December 1994.

Before 318 drums of OU 2 Surface Water IM/IRA sludge can be

shipped offsite for disposal, additional sampling will be required in order to meet the hand disposal requirements of the subcontractor in Utah. Sampling can begin as soon as the Sampling and Analysis Plan is approved. Also, maintenance of the surface water seep, SW-59, has been delayed. The project is currently awaiting approval of the required excavation permits.

**Surface Water Treatment** - Surface Water IM/IRA treatment activities included the following:

|                                   |                    |
|-----------------------------------|--------------------|
| Treated surface water this month: | 4,520 gallons      |
| Total treated to date:            | 24,804,526 gallons |

**Planned Work for December**

- Normal operations will continue.

**Problems**

None

**Open Items**

None

### 2.3 OU 3 - OFFSITE AREAS

OU 3 can be divided into two categories based on two main activities. The IAG-directed activities, according to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), involve assessment of contamination in offsite areas also referred to as Contamination of the Land Surface (IHSS 199), Great Western Reservoir (IHSS 200), Standley Lake (IHSS 201), and Mower Reservoir (IHSS 202). The second category responds to a 1985 out-of-court lawsuit settlement, McKay vs. U. S., which directed that the surface soil contamination be remediated. Remedial activities in compliance with the Settlement Agreement (deep disc plowing) began in 1985. The disturbance resulting from remediation is being revegetated with mediocre success. The overall schedule for this activity is determined by the year-to-year success of the revegetation effort and requirements of the landowners.

**Scope of Work** None  
**Changes This Period**

**Technical Approach** None  
**Changes This Period**

|                                      |  |           |
|--------------------------------------|--|-----------|
| <b>IAG Milestone Accomplishments</b> | Submit Draft Past Remedy Report  | 26 Oct 90 |
|                                      | Submit Draft Historical Information/ Preliminary Health Risk Assessment Report | 09 Nov 90 |
|                                      | Submit Final Past Remedy Report  | 02 Apr 91 |
|                                      | Submit Final Historical Information/ Preliminary Health Risk Assessment Report | 16 Apr 91 |
|                                      | Submit Draft Phase I RFI/RI Work Plan  | 10 Jul 91 |
|                                      | Submit Final Phase I RFI/RI Work Plan  | 06 Dec 91 |

#### **Future IAG Milestones Through FY 95**

| <u>Milestone Name</u>              | <u>Planned Date</u> | <u>Approved Extension Status</u> | <u>Forecast Date</u> |
|------------------------------------|---------------------|----------------------------------|----------------------|
| Submit Draft Phase I RFI/RI Report | 16 Jul 93           | 30 Oct 95                        | 30 Oct 95            |
| Submit Final Phase I RFI/RI Report | 13 Dec 93           | 11 Jul 96                        | 11 Jul 96            |

#### **November Work Activity Status**

The Jefferson County Planning Commission recently granted approval to the DOE (October 7, 1994) for the construction of the monitoring stations on the two proposed sites; however, the Open Space Commission has indicated that it was not involved in the authorization process and that it required additional information to grant a site usage approval. This latest setback is expected to further delay construction activities at the proposed sites. A meeting was held on November 14, 1994, with the Jefferson County Open Space Commission to discuss the two proposed monitoring sites to be located within the Open Space property. The Commission accepted the planned monitoring activities with the exception of the proposed air monitoring station site located near the southwest shoreline of Standley Lake. The county was concerned that this site would be

located too close to existing public trails. A site walk was conducted with Jefferson County personnel and the proposed site was accepted.

An electrical inspection is planned to be performed by the City of Westminster and the City of Arvada at the two air monitoring station sites located north of 100th Avenue and near the intersection of 86th Avenue and Kipling Street, respectively. Following inspection, the Public Service Company will be scheduled to connect electrical power to the monitoring station sites as soon as possible. Power will be supplied to the 86th Avenue/Kipling Street site first, so that a start-up demonstration can be scheduled for the United States Fish and Wildlife Service at the earliest possible time.

A meeting was held on November 17, 1994, to present the preliminary results of the OU 3 Remedial Investigation to the Cities of Arvada and Westminster, as well as the Jefferson County Open Space Commission and the Farmer's Reservoir and Irrigation Company.

#### **Technical Memoranda**

##### Project

##### OU 3 - Offsite Areas

###### **TM #1**

###### **TM Title**

###### **TM Status**

Field Changes to RFI/RI Work Plan

When preparation was concluded: 10 May 93

Projected date of submittal to EPA/CDPHE: 10 May 93

Actual date of submittal: 23 Apr 93

Date comments were received: 05 Jan 94

###### **TM #2**

###### **TM Title**

###### **TM Status**

Exposure Scenarios for the Human Health Risk Assessment

When preparation was concluded: 12 May 93

Projected date of submittal to EPA/CDPHE: 12 May 93

Actual date of submittal: 03 May 93

Date comments were received: 15 Jul 93

###### **TM #3**

###### **TM Title**

###### **TM Status**

Modeling

When preparation was concluded: Jan 95

Projected date of submittal to EPA/CDPHE: 02 Mar 95

Actual date of submittal: To be determined

Date comments were received: To be determined

###### **TM #4**

###### **TM Title**

###### **TM Status**

Contaminants of Concern

When preparation was concluded: Aug 94

Projected date of submittal to EPA/CDPHE: 20 Sep 94

Actual date of submittal: 26 Sep 94

Date comments were received: To be determined

TM #5  
TM Title  
TM Status

Toxicity  
When preparation was concluded: Sep 94  
Projected date of submittal to EPA/CDPHE: 10 Nov 94  
Actual date of submittal: 11 Oct 94  
Date when comments were received: To be determined

**Planned Work for December**

- Efforts will continue to finish the draft of TM #3, *Modeling*.
- Efforts will continue to deliver to the regulatory agencies TM #2, *Exposure Scenarios*.
- Comments from the regulatory agencies on TM #4, *COC Determination*, are expected.

**Problems**

None

**Open Items**

None



## **2.4 OU 4 - SOLAR EVAPORATION PONDS**

OU 4 comprises five solar evaporation ponds: 207A, 207B series (North, Center, South), and 207C, which were constructed for treatment and storage of process water from industrial operations. The process water contained treated acidic wastes, industrial liquid wastes (e.g., metal plating solutions), and low-level radioactive wastes.

As technology improved through the early 1960s and 1970s, the ponds were relined with various upgraded materials. However, leakage from the ponds into the soil and groundwater was suspected. Interceptor trenches were installed in 1971 to collect and recycle contaminated groundwater to the ponds and to minimize natural seepage and pond leakage from entering North Walnut Creek. In 1981, these trenches were upgraded by the current, larger Interceptor Trench System, which returned approximately 4 million gallons of groundwater back into the solar evaporation ponds each year.

Process water has not been pumped into the ponds since 1986, and with the diversion of the Interceptor Trench System water to storage tanks in April 1993, groundwater is no longer returned to the ponds. This placement of water into the ponds had been occurring without meeting Land Disposal Restrictions and Minimum Technology Requirements of RCRA. A new, dedicated Building 910 evaporation-treatment facility became operational in July 1993. This building supplements the site's waste treatment facility in Building 374 to process the water stored in the modular tanks. Because upgrades were installed in Building 374, and since other site waste streams decreased in volume, Interceptor Trench System water is now preferentially treated in Building 374 rather than Building 910.

The Solar Evaporation Ponds Subproject is comprised of four technical areas: (1) disposition of noncertified pondcrete and saltcrete and pond sludge processing as required by the Federal Facilities Compliance Act; (2) water management/treatment by means of the IM/IRA Decision Document signed by EPA, CDPHE, and DOE; (3) the OU 4 assessment and remedial action, per the IAG, which identified the ponds as one of the 16 OUs to be remediated at the Rocky Flats Environmental Technology Site and superseded the 1988 Ponds-Closure Plan submitted by DOE to the regulators; and (4) pad operations, storage, and disposal activities that are necessary to meet the site's RCRA interim status and permit requirements for storage of pond wastes. The water and pond sludge management is a necessary precursor to OU 4 assessment and remediation, and pad operations are necessary support activities, at least until the noncertified pondcrete is processed and disposed.

Work in these four areas was planned to close the ponds and remediate OU 4. The work was scoped to (1) remove water and sludge from the ponds, (2) provide a treatment facility to replace the ponds as evaporation-treatment and storage units for pond-related contaminated groundwater, (3) remove and dispose of pond wastes in compliance with all applicable regulations such as RCRA, (4) assess the nature and extent of contamination at the ponds, (5) complete a RCF:A closure of the impoundments, (6) remediate the ponds (source and soils) as needed, and (7) remediate the groundwater as needed.

### **2.4.1 OU 4 ASSESSMENT**

|                     |      |
|---------------------|------|
| Scope of Work       | None |
| Changes This Period |      |

|                     |      |
|---------------------|------|
| Technical Approach  | None |
| Changes This Period |      |

|                 |                                       |           |
|-----------------|---------------------------------------|-----------|
| IAG Milestone   | Submit Draft Phase I RFI/RI Work Plan | 08 Jun 90 |
| Accomplishments | Submit Final Phase I RFI/RI Work Plan | 26 Nov 90 |

**IAG Milestone  
Accomplishments**

Submit Draft Phase II RFI/RI Work Plan  
Submit Final Phase II RFI/RI Work Plan

27 May 94  
02 Sep 94

**Future IAG Milestones  
Through FY 95**

None

**November Work Activity Status**

**Phase II RFI -** In accordance with the Environmental Restoration 2000 Initiative, progress continues on developing the OU 4 Phase II RFI/RI logic network, cost estimates, and detailed field schedule to accelerate the Phase II RFI program.

Applicable personnel associated with the phase II field program are receiving training. In addition, various pre-field mobilization activities are being conducted, such as radiological instrumentation calibration, equipment and supplies procurement, permits development, subcontracts for waste management, escorting support, and readiness assessment.

**Technical Memoranda**

**Project**

**OU 4 - Solar Evaporation Ponds**

**TM #1**

**TM Title**

**TM Status**

**Vadose Zone Investigation**

Draft submitted to EPA/CDPHE: 16 Nov 92

Comments received: 30 Nov 92

Conditional approval: 30 Nov 92

Projected submittal of Final TM to EPA/CDPHE: 15 Dec 92

Actual submittal date of Final TM: 15 Dec 92

Submittal of TM #1 Vadose Zone Schedule: 19 May 93

EPA/CDPHE final approval of TM #1: 17 Jun 93

**TM #2**

**TM Title**

**TM Status**

**Modification to Field Activities**

Draft submitted to EPA/CDPHE: 18 Mar 93

Comments received: 07 May 93

Projected submittal of Final TM to EPA/CDPHE: 07 Jun 93

Actual submittal date of Final TM: 09 Jun 93

EPA/CDPHE final approval of TM #2: 30 Jun 93

**TM #3**

**TM Title**

**TM Status**

**Environmental Evaluation**

Draft submitted to EPA/CDPHE: 19 Mar 93

Comments received: EPA 21 Apr 93, CDPHE 02 Jun 93

Projected submittal of Final TM to EPA/CDPHE: 30 Apr 93

Actual submittal date of Final TM: 02 Jul 93

EPA/CDPHE final approval of TM #3: 30 Jul 93

**TM #4**

**TM Title**

**TM Status**

**Human Health Risk Assessment Exposure Scenarios**

Draft submitted to EPA/CDPHE: 19 Mar 93

Comments received: EPA 21 Apr 93, CDPHE 23 Apr 93  
 Projected submittal of Final TM to EPA/CDPHE: 11 Jun 93  
 Actual submittal date of Final TM: 11 Jun 93  
 EPA/CDPHE final approval of TM #4: 25 Jun 93

**Planned Work for December**

- The field activities for the Phase II RFI/RI program are scheduled to begin.

**Problems**

None

**Open Items**

None

**2.4.2 OU 4 REMEDIATION**

**Scope of Work  
Changes This Period**

None

**Technical Approach  
Changes This Period**

None

**IAG Milestone  
Accomplishments**

Submit Draft Phase I Proposed IM/IRA Decision Document 27 May 94

**Future IAG Milestones  
Through FY 95**

| <u>Milestone Name</u>  | <u>Planned<br/>Date</u> | <u>Approved<br/>Extension<br/>Status</u> | <u>Forecast<br/>Date</u> |
|--|-------------------------|--|--------------------------|
| Submit Final Phase I Proposed IM/IRA Decision Document                         | 12 Sep 94               | 10 Feb 95*                               | On schedule              |
| All Solar Ponds Emptied of Water and Sludge                                    | new                     | 20 Jan 95                                | 07 Jan 95                |
| Submit IM/IRA Responsiveness Summary   | 25 Jan 95               | 09 Jun 95*                               | On schedule              |
| Submit Final Phase I IM/IRA Decision Document and Final Responsiveness Summary | 24 Apr 95               | 29 Aug 95*                               | On schedule              |
| Submit IM Title II Design Work Plan  | 24 Jun 96               | 18 Dec 95*                               | On schedule              |
| Begin Phase I IM/IRA Construction  | 28 Jan 95               | 28 Oct 96*                               | On schedule              |

\* Extension approved by the regulatory agencies on November 23, 1994..

**November Work Activity Status**

**Treatment Treatability -**

**Sludge** - Nine drums of sludge samples were shipped to the laboratory on November 9, 1994, and were subsequently determined to have insufficient volume. Consequently, two additional 30-gallon open top drums of sludge will be shipped by early December 1994. One drum of A/B and one drum of C Pond material will be collected for shipment. Clarifier sludge samples are

being examined for sufficient sludge. If the two 30-gallon drums in Building 788 are found to be acceptable, these samples will also be shipped. Discussions that have concerned future sample and bulk material collection have been held.

The sample shipment issues continue to be the vital first step in starting design activities. All documents necessary to issue modifications to the Conceptual Design and Treatability Study subcontracts have been provided to EG&G procurement. Awards for both subcontract modifications should be in place soon.

#### **Waste Storage and Disposal**

**Pad Maintenance** - An Integrated Work Control Program pad maintenance pad drainage piping work package was completed and is currently in review. The valves and other materials were ordered and are expected within four weeks.

**Container Procurement** - The first "lot" inspection of containers commenced on November 15, 1994, and was satisfactorily completed. The first production delivery commenced on November 21, 1994.

#### **Interim Remedial Action**

**Water Management** - Except for a minor cleanup, work was completed on the Building 779 Storm Drain Extension on November 29, 1994. Building 779 area runoff water is no longer collected by the Interceptor Trench System, and is expected to substantially reduce the volume of water pumped to the Modular Storage Tanks ultimately requiring processing.

Steam system pressure relief valves in Building 910 were returned after offsite maintenance and calibrations were performed. They were reinstalled, and Building 910 now meets all Pressure Safety Program requirements.

DOE forwarded a request to the regulatory agencies to reduce the frequency of RCRA inspections on empty tanks in Building 910. The formal correspondence went to the regulatory agencies on October 26, 1994. No response has been received.

The modular tanks have a remaining usable volume of about 298,000 gallons.

#### **Interim Measure Remediation**

**IM/IRA Decision Document** - Proposed adjusted OU 4 Phase I milestones were presented to the Joint Working Group for discussion. Generally, the group seemed agreeable to the duration of the milestone extensions (typically six months); however, concern was expressed over the 13-month extension proposed for the "Start of Construction" milestone. The regulatory agencies requested additional information regarding advantages to be realized through

inclusion of the extra scope that has resulted in the need to extend milestones. This information was presented during the meeting of the Joint Working Group held on November 8, 1994. No definitive conclusions were made at this meeting; however, the requested extensions were granted on November 23, 1994. The only deviation in the extension language was a change in the name of the "Start of Construction" milestone to "Start of Soil Excavation relative to IHSS 101 Closure." This extension approval allows EG&G to continue work on placement of minimally treated pond sludge and pondcrete under the Phase I remediation engineered barrier. CDPHE is still reserving comment on whether they support this work scope until after the public comment period.

The Request for Proposal for modifications to the current subcontract was received by the subcontractor. This receipt allows the subcontractor to begin to prepare its proposal for the work necessary to modify the IM/IRA to include the disposition of treated pondcrete beneath the engineered barrier, closure of RCRA Unit 24 (also known as Building 964), the annexation of IHSS176, and the validation of prior modeling efforts.

The subcontractor then submitted its proposal for the work identified in the most recent modification to the Statement of Work. Significant differences exist between the subcontractor's proposal and the Government estimate for two areas of work. A limited change order has been issued to allow work to commence immediately on most of the work while differences on the remaining portions are resolved and the final contract change is negotiated.

**Preconstruction** - The Title II Remedial Design subcontractor has submitted its proposal for the activities in Revision #5 of the Statement of Work. The proposal for the 60 percent Title II redesign is significantly different than the government estimate. This work will not be initiated with a directed contract modification as a result of this discrepancy. EG&G Solar Ponds Projects completed the technical evaluation of the proposal, and contract negotiations are scheduled for early December 1994.

The Building 788 removal project held a review meeting on November 11, 1994, concerning the electrical power relocation portion of this activity. No comments were received and the final package is expected to be issued by December 1994.

The Building 964 Removal Title II design package has been completed and issued for plant review. The Title II cost estimate has also been initiated.

The cement product from silo #2 was downloaded into rejected waste crates and taken to the landfill on November 16, 1994. Removal of the cement silo #2 structure was accomplished. The removal of

cement product and silo #1 is currently on hold until C-Pond sludge removal activities are complete.

The scheduled completion date for the General Site Improvements Design engineering package will not be met. The plant review comments on this design package were extensive concerning the transfer line and the electrical/alarms sections. Subcontractor costs for this task are currently over budget, so the comment incorporation has not begun. EG&G is evaluating available options to complete this work. The EG&G engineering portion of this design for the Interceptor Trench System piping connection in Building 374 was issued for review on November 15, 1994.

**Interim Measure Sludge** - Sludge removal (vacuuming) is proceeding with 117.5 loads removed since October 19, 1994. The number of work days per week has been increased to all good weather days except holidays in an effort to accelerate sludge transfer. As of November 30, 1994, approximately 109,000 gallons of sludge/water remain in the 207C Pond. The current estimated date to have the 207C Pond "empty" is January 3, 1995, which does not include the final rinse down, the radiation survey, and the sealing. A total of 14 days have been lost because of inclement weather and equipment failure. The transfer operations were halted from November 11 to November 18, 1994, to repair a structural failure on the saltbuster. Transfer operations resumed on November 21, 1994.

#### **Planned Work for December**

- Sludge removal operations in Pond 207C are planned.
- The IM/IRA Title II Design effort, which encompasses the effects of including minimally treated sludge and pondcrete under the barrier, is planned.
- The removal process at the silos located near Building 788 is planned.
- The site stripout activity is planned.
- The site cleanup in support of the relocation of the cargo containers currently located near Building 964 is planned.
- The shipment of production containers for the 904 Pad restack will continue. The 904 repack will start.
- The Treatability Studies on minimally treated pond sludge, pondcrete, and the conceptual design will begin.
- The title II design packages for the removal of Building 964 and the electrical power relocation near Building 788 will be completed.

#### **Problems**

None

## Open Items

Issues that initiated a dispute resolution on July 7, 1994, concerning the OU 4 engineered barrier continue. Although the dispute formally ended on July 27, 1994, full regulatory support was not achieved. EPA and DOE both support the plan that calls for placement of minimally treated sludge and pondcrete under the engineered barrier in lieu of offsite disposal, but CDPHE has opted to reserve comment until after the public comment period on the Phase I IM/IRA Decision Document. An extension was granted in November 1994 for all related Phase I milestones, but regulatory concurrence for planned technical scope is still not known.

There is uncertainty regarding the implementation of the State of Colorado's Corrective Action Management Unit Temporary Unit regulation. The State of Colorado ratified legislation that is more restrictive than the Environmental Protection Agency's, but wording in the law is not expected to interrupt planned remediation activities at OU 4.

A key OU 4 assumption is the use of the Corrective Action Management Unit Temporary Unit for treating certain remediation wastes during Phase I Remediation. DOE plans to use the Corrective Action Management Unit Temporary Unit regulations to promote significant cost savings and schedule acceleration while fully protecting human health and the environment. However, the applicability of the law on OU 4 remediation has been questioned by the State of Colorado, and the State has not communicated whether additional requirements would be imposed. Therefore, this regulatory uncertainty poses increased risk to the Phase I remediation project schedule.

Treatment of sludge and pondcrete requires Tent 12 and the pad area south on the 750 Pad (for pondcrete) and Tent 11 on the 904 Pad (pondcrete). These areas need to be made available by either moving wastes to another location or preferably shipping offsite all Landfill Disposal Restrictions compliant saltcrete. Neither option is currently funded, although partial funding for saltcrete disposal does exist. A substantial increase in the funding for saltcrete disposal is needed to execute this option.

## 2.5 OU 5 - WOMAN CREEK

OU 5, the Woman Creek Priority Drainage, comprises assessment and remediation of 11 IHSSs in the Woman Creek drainage: Original Landfill (IHSS 115); Ash Pits (IHSSs 133.1 - 133.4); Incinerator (IHSS 133.5); Concrete Wash Pad (IHSS 133.6); Detention Ponds C-1 and C-2 (IHSSs 142.10 and 142.11); Surface Disturbance (IHSS 209), southeast of Building 881; and Water Treatment Plant Backwash Pond (IHSS 196). Two additional surface disturbances have been identified: one south of the Ash Pits and a second west of IHSS 209. These last two sites have been included in the OU 5 Work Plan. IHSS 196 has been assigned to this OU. Possible contamination in this OU was caused by landfill operations, stormwater runoff into holding ponds, and Ash Pit operations. Constituents in OU 5 include depleted uranium, metals, solvents, pesticides, polychlorinated biphenyl, and Volatile Organic Compounds. Media affected include soils, sediments, surface water, groundwater, and air.

**Scope of Work  
Changes This Period**

None

**Technical Approach  
Changes This Period**

The Presumptive Remedy approach will be used for evaluating and selecting remedial options for the Original Landfill (IHSS 115) and the Filter Backwash Pond (IHSS 196). This "focused Feasibility Study" will be conducted in accordance with EPA's Presumptive Remedy guidance for CERCLA Municipal Landfills (EPA 540-F-93-035) and related guidance. Per this guidance, a streamlined or limited risk assessment that is focused on OU 5 groundwater will be conducted.

**IAG Milestone  
Accomplishments**

|                                       |           |
|---------------------------------------|-----------|
| Submit Draft Phase I RFI/RI Work Plan | 05 Apr 91 |
| Submit Final Phase I RFI/RI Work Plan | 30 Aug 91 |

**Future IAG Milestones  
Through FY 95**

| <u>Milestone Name</u>              | <u>Planned<br/>Date</u> | <u>Approved<br/>Extension<br/>Status</u> | <u>Forecast<br/>Date</u> |
|------------------------------------|-------------------------|--|--------------------------|
| Submit Draft Phase I RFI/RI Report | 30 Nov 93               | 21 Jul 95                                | 11 May 95                |
| Submit Final Phase I RFI/RI Report | 03 May 94               | 17 Jan 96                                | 14 Nov 95                |

**November Work Activity Status**

A round table discussion with the regulatory agencies and DOE was held on November 3, 1994, to discuss the progress to date, assumptions, and documentation of results pertaining to the groundwater monitoring. The groundwater modeling activities continue, and the calibration runs with MODFLOW were completed. An additional database was used to interpolate model calculated heads to observation well sites. The results showed that some additional calibration was needed. Additional work was also performed to dry-up model cells that contain monitoring wells that are consistently dry. The model is now calibrated.

Under the Implementation of TM #15, *Addendum to the Field Sampling Plan*, the subcontractor's clearances were received and



before the drilling of the three deep bedrock monitoring wells at IHSS 115 was completed, the drill rig was decontaminated.

A meeting was held on November 17, 1994, with the regulatory agencies and DOE to discuss the FS and to outline the strategy of the project. A possible accelerated action was identified that will cleanup the contaminated rubble/debris located just near the IHSS 133.6, the concrete wash pad.

The draft CDPHE Conservative Screen letter report was reviewed by DOE on November 9, 1994, and comments were made and incorporated. The final letter was submitted to the regulatory agencies on November 30, 1994.

The Draft Final TM #13, *Model Descriptions*, was approved by the EPA on November 17, 1994, and the Final TM #13 was received by DOE on November 29, 1994, for transmittal to the regulatory agencies.

As part of the Human Health Risk Assessment, a data aggregation meeting was held on November 18, 1994, with the regulatory agencies and DOE to discuss the grid placement for the Risk Assessment. Agreement was reached regarding the area of concerns.

The Draft Final TM #11, *Contaminants of Concern*, for the Human Health Risk Assessment is being reviewed by the regulatory agencies. Response to comments are expected in December 1994.

In order to streamline the Risk Assessment, the regulatory agencies have provided written guidance regarding the submittal of a Toxicity Assessment TM. If toxicity information is not available from either the IRIS or HEAST databases, the written guidance requested that the toxicity information be provided for all the OU 5 contaminants of concern. In lieu of a Toxicity Assessment TM, a one-page table that summarized the cases where the potential contaminants of concern were not found in either database was submitted to the regulatory agencies on November 14, 1994.

Surface water modeling activities continue. Mean daily flow records were obtained from the Colorado Water Resource Division for a gaging station at the mouth of the Clear Creek Canyon and are being used to calibrate the surface water flow model. Records from 1962 to 1993 were obtained and were edited and formatted for input into specific models. This information will be used to estimate groundwater infiltration into the alluvium, and this infiltration will be entered as an active groundwater lateral inflow to Basin 1 to simulate an external source of water. Surface-water modeling activities continue with calibration being revisited to resolve continuing problems with the calibration basins west of the Rocky Flats Environmental Technology Site boundary. The sediment transport

parameters developed for OU 6 will be applicable to OU 5 and will be incorporated.

The High Purity Germanium survey started on November 7, 1994, with five detectors instead of six and with a longer detection time. However, inclement weather has delayed progress causing this activity to be behind on the critical path schedule. Efforts are under way to correct this situation.

## Technical Memoranda

### Project

### OU 5 - Woman Creek Priority Drainage Remedial Investigation

#### TM #1

#### TM Title

#### TM Status

#### Surface Water and Sediments

When preparation was concluded: 30 Nov 92

Projected date of submittal to EPA/CDPHE: 30 Nov 92

Actual date of submittal: 13 Oct 92

#### TM #2

#### TM Title

#### TM Status

#### Surface Geophysics

When preparation was concluded: 30 Nov 92

Actual date of submittal: 13 Oct 92

#### TM #3

#### TM Title

#### TM Status

#### Soil Sampling at IHSS 115

When preparation was concluded: 07 May 93

Actual date of submittal: 26 Jan 93

#### TM #4

#### TM Title

#### TM Status

#### Soil Sampling at IHSS 133

When preparation was concluded: 07 Jun 93

Actual date of submittal: 12 Apr 93

#### TM #5

#### TM Title

#### TM Status

#### Soil Gas Sampling at IHSS 115

When preparation was concluded: 07 May 93

Actual date of submittal: 25 Mar 93

#### TM #6

#### TM Title

#### TM Status

#### Cone Penetrometer at IHSS 115

When preparation was concluded: 14 Apr 93

Actual date of submittal: 25 Mar 93

#### TM #7

#### TM Title

#### TM Status

#### Soil Borings at IHSS 133

When preparation was concluded: 07 May 93

Actual date of submittal: 19 Feb 93

|                           |  |
|---------------------------|--|
| TM #8                     | Monitoring Wells at IHSS 115   |
| TM Title                  | TM #8 has been canceled and has been replaced by a letter outlining the justification for the location of the wells in IHSS 115.   |
| TM Status                 |  |
|                           |  |
| TM #9                     | Monitoring Wells at IHSS 133, Ash Pits, Incinerator, and Concrete Wash Pad   |
| TM Title                  |  |
| TM Status                 | Actual date of the Draft TM submittal to EPA/CDPHE: 06 May 93<br>Actual date of the Final TM submittal to EPA/CDPHE: 28 Jun 93   |
|                           |  |
| TM #10                    | Soil Borings at IHSS 209   |
| TM Title                  | When preparation was concluded: 06 Mar 93  |
| TM Status                 | Actual date of the Final TM submittal to EPA/CDPHE: 06 Mar 93  |
|                           |  |
| TM #11                    | Contaminants of Concern  |
| TM Title                  | Actual date of the Draft Final TM submitted to EPA/CDPHE: 08 Nov 94  |
| TM Status                 | Submittal of TM #11 was delayed because of the Human Health Risk Assessment stop work order.   |
|                           |  |
| TM #12                    | Exposure Scenarios   |
| TM Title                  | When the Final TM is estimated to be concluded: 07 Jan 95  |
| TM Status                 | Submittal of TM #12 was delayed because of the Human Health Risk Assessment stop work order.   |
|                           |  |
| TM #13                    | Modeling   |
| TM Title                  | Actual date of submittal of the Draft Final TM to EPA/CDPHE: Dec 93  |
| TM Status                 | Actual date of submittal of the Final to EPA/CDPHE: 29 Nov 94  |
|                           |  |
| TM #14                    | Toxicity Assessment  |
| TM Title                  | Actual date of submittal to EPA/CDPHE: 14 Nov 94   |
| TM Status                 | Per written guidance from the regulatory agencies, a table summarizing specific Preliminary Contaminants of Concern was submitted in lieu of this TM.  |
|                           |  |
| TM #15                    | Addendum to the Field Sampling Plan  |
| TM Title                  | Actual date of the Final TM submittal to EPA/CDPHE: 31 Aug 94  |
| TM Status                 |  |
| Planned Work for December | <ul style="list-style-type: none"> <li>• The field work activities will continue.</li> <li>• The Human Health Risk Assessment work including surface water, air, and groundwater modeling activities will continue.</li> </ul> |

- The FS will continue with an emphasis on the Presumptive Remedy approach to the Original Landfill.
- The Environmental Evaluation of the Woman Creek Priority Drainage will continue.

**Problems**

The start of the High Purity Germanium work was delayed because of recent snow storms and high moisture in the soil. This activity is on the critical path for completing surface soil sampling per TM #15 and incorporation of analytic data into the RFI/RI Report.

**Open Items**

The receipt of comments from the regulatory agencies on TM #11, *Contaminants of Concern*, continue to be pending.

## 2.6 OU 6 - WALNUT CREEK

OU 6, the Walnut Creek Priority Drainage, comprises assessment and remediation of 19 IHSSs: the A-series Detention Ponds, Ponds A-1 through A-4 (IHSSs 142.1 through 142.4 and 142.12); the B-series Detention Ponds, Ponds B-1 through B-5 (IHSS 142.5 through 142.9); the North Spray Field (IHSS 167.1); the East Area Spray Field (IHSS 216.1), the Trenches A, B and C (IHSSs 166.1, 166.2 and 166.3); the Sludge Dispersal Area (IHSS 141); the Triangle Area (IHSS 165); the Old Outfall Area (IHSS 143); and the Soil Dump Area (IHSS 156.2).

Completion of field operations resulted in obtaining the following samples from the IHSSs in OU 6: stream sediment, pond sediment, surface soil, subsurface soil, and surface and groundwater.

### Scope of Work Changes This Period

None

### Technical Approach Changes This Period

The revised methodology for the completion of the environmental evaluations for Walnut Creek and Woman Creek was presented to DOE on October 4, 1994. This methodology will group Operable Unit environmental evaluations into watersheds. Schedules were completed that will guide this methodology.

### IAG Milestone Accomplishments

|                                       |           |
|---------------------------------------|-----------|
| Submit Draft Phase I RFI/RI Work Plan | 19 Apr 91 |
| Submit Final Phase I RFI/RI Work Plan | 16 Sep 91 |

### Future IAG Milestones Through FY 95

| <u>Milestone Name</u>              | <u>Planned<br/>Date</u> | <u>Approved<br/>Extension<br/>Status</u> | <u>Forecast<br/>Date</u> |
|------------------------------------|-------------------------|--|--------------------------|
| Submit Draft Phase I RFI/RI Report | 04 Aug 93               | 21 Jun 95                                | 19 Apr 95                |
| Submit Final Phase I RFI/RI Report | 07 Jan 94               | 21 Dec 95                                | 20 Nov 95                |

### November Work Activity Status

A preliminary draft of Chapter 4 of the RFI/RI Report, Nature and Extent, is currently being reviewed; these comments will be incorporated in the Draft RFI/RI Report.

The comment responses for TM #4, *Chemicals of Concern*, were completed on November 3, 1994, for delivery to the regulatory agencies. Approval from the agencies is pending.

Comments from the regulatory agencies are still pending on the Draft TM #5, *Toxicity Assessment*. Work continues on the Final TM #2, *Exposure Scenarios*, and the Final revisions to TM #3, *Model Description*.

The air modeling is behind schedule but will be completed in time to accommodate the Risk Assessment. The groundwater and surface water modeling activities continue and are on schedule.

A meeting was held on November 21, 1994, with the regulatory

agencies to present the Ecological Risk Assessment schedules. The regulatory agencies gave verbal approval for an IAG milestone schedule extension request instead of decoupling the Ecological Risk Assessment from the Draft RFI/RI Report. A follow-up letter will be completed on December 2, 1994.

The Final Data Aggregation Follow Up Letter Report on the source areas, corresponding conservative screen ratios, and areas of concern were delivered to DOE on November 3, 1994, for transmittal to the regulatory agencies.

Sprinkler Pipe Cleanup And B-3 Pond Cleanup - The 788 permacon is experiencing schedule slippage, due to other jobs using the permacon, which will delay the start of the pipe cut-up project from early January 1995 until late January 1995.

Spray field piping currently on the ground in various locations in the Buffer Zone will be removed for reuse or recycling. All piping and associated equipment will be surveyed prior to removal and washed prior to dispositioning.

Other jobs with higher priority have required so much radiological control technician support that the Spray Field job has been effectively shut down and has fallen behind schedule. The situation of the radiological control technician shortage has been elevated through EG&G.

B-4 Pond Pipe Cut-up - Contaminated fiberglass piping currently located near the B-4 pond will be cut up, packaged, and shipped to the Nevada Test Site for burial. Any contaminated piping from the spray field clean up will also be disposed of in this manner.

Decontamination Of Steel From 964 Yard - If possible, steel equipment and materials found to be contaminated during the 964 Yard cleanup are to be decontaminated. A variety of methods are being evaluated and the best solution appears to be a combination of two or three of these methods. This project is currently not funded as the method(s) of decontamination have yet to be determined.

The possibility of setting up a containment at the 964 yard, instead of using the 788 yard, is being evaluated.

## Technical Memoranda

### Project

### OU 6 - Walnut Creek

TM #1

TM Title

TM Status

Work Plan Modifications

Approved by EPA: 08 Jan 93

TM #2  
TM Title  
TM Status

Exposure Scenarios  
When preparation of the Draft TM was concluded: 07 July 93  
Date the Draft TM was submitted to EPA/CDPHE: 07 Jul 93  
Projected date the Final TM will be submitted to EPA/CDPHE: To be determined

TM #3  
TM Title  
TM Status

Modeling Description  
When preparation of draft was concluded: 10 Nov 93  
Date the Draft TM was submitted to EPA/CDPHE: 10 Nov 93  
Date EPA/CDPHE comments were received: 23 Dec 93  
Date the Final TM was submitted to EPA/CDPHE : 04 Jan 94  
Projected date the Second Final TM will be submitted to EPA/CDPHE: To be determined

TM #4  
TM Title  
TM Status

Contaminants of Concern  
Date the Draft TM was submitted to EPA/CDPHE: 23 Aug 94  
Date EPA/CDPHE comments were received: 03 Oct 94  
Projected date the Final TM will be submitted to EPA/CDPHE: Waiting for EPA approval of response to comments

TM #5  
TM Title  
TM Status

Toxicity Factors  
Date the Draft TM was submitted to EPA/CDPHE: 23 Aug 94  
Date EPA/CDPHE comments were received: To be determined  
Projected date the Final TM will be submitted to EPA/CDPHE: To be determined

#### Planned Work for December

- Efforts will continue on the preparation and submittal process for the TM #2, *Exposure Assessment*.
- The preparation of the Assessment Endpoint TM, *Conceptual Design TM*, and the Contaminant of Concerns Screen Methodology TM for the Environmental Evaluation will continue.
- Groundwater and surface water modeling efforts will be completed.
- Air modeling will continue.
- Efforts will continue on TM #1, *Feasibility Study*, and the present technical issues to the regulatory agencies.

#### Problems

None

**Open Items**

The review by the regulatory agencies of the Draft TM #5, *Toxicity Factors*, is pending.

The agencies' approval of the Final response to comments on TM #4, *Chemicals of Concern*.



## 2.7 OU 7 - PRESENT LANDFILL

OU 7, the Present Landfill, is located north of the site complex on the western edge of an unnamed tributary of North Walnut Creek and comprises four IHSSs. IHSS 114 includes landfill waste and leachate at the Present Landfill and soils beneath the landfill potentially contaminated with leachate. IHSS 203 contains potentially contaminated soils at the Inactive Hazardous Waste Storage Area. A section of the Present Landfill located in the southwest corner was used between 1986 and 1987 as a temporary storage area for hazardous waste. The Present Landfill began operation in August 1968 and was originally constructed to provide for disposal of the Rocky Flats Environmental Technology Site nonradioactive and nonhazardous wastes. In September 1973, tritium was detected in leachate from the landfill. During the mid-1980s, extensive investigations were conducted on the waste streams (types) placed into the landfill; consequently, hazardous wastes/hazardous constituents were identified. Although currently operating as a nonhazardous sanitary landfill, the facility is considered an inactive hazardous waste disposal unit undergoing RCRA closure.

In order to maintain the landfill pond at an acceptable volume to prevent discharge, spray evaporation of landfill pond water was applied to the north and south of the landfill pond comprising IHSSs 167.2 and 167.3, respectively. The practice of spray evaporation was discontinued in 1993.

### **Scope of Work Changes This Period**

As a result of the Senior Executive Committee Dispute Resolution, four new milestones concerning the Landfill Leachate Collection IM/IRA were added to the OU 7 work scope. As directed by the regulatory agencies, the Landfill Leachate Collection Project will be completed as an accelerated action using the Proposed Action Memorandum approach.

### **Technical Approach Changes This Period**

As a result of the Senior Executive Committee Dispute Resolution, a separate IM/IRA is required for the landfill leachate. As directed by the regulatory agencies, the Landfill Leachate Collection Project will be completed as an accelerated action. A Proposed Action Memorandum rather than an IM/IRA will be used.

### **IAG Milestone Accomplishments**

|  |           |
|--|-----------|
| Submit Draft Phase I RFI/RI Work Plan  | 08 Jun 90 |
| Submit Final Phase I RFI/RI Work Plan  | 28 Aug 91 |
| Submit Draft Phase I RFI/RI Report     | 23 May 94 |
| Submit Draft Phase II RFI/RI Work Plan | 23 May 94 |
| Submit Final Phase I RFI/RI Report     | 08 Sep 94 |
| Submit Final Phase II RFI/RI Work Plan | 08 Sep 94 |

### **Future IAG Milestones Through FY 95**

| <u>Milestone Name</u>                                  | <u>Planned<br/>Date</u> | <u>Approved<br/>Extension<br/>Status</u> | <u>Forecast<br/>Date</u> |
|--|-------------------------|--|--------------------------|
| <u>Landfill Closure IM/IRA</u>                         |                         |  |                          |
| Submit Draft Phase I Proposed IM/IRA Decision Document | 01 Nov 94               | 31 Aug 95                                | 03 May 95                |
| Submit Final Phase I Proposed IM/IRA Decision Document |                         | 05 Jan 96                                | 03 Jul 95                |
| Submit IM/IRA Responsiveness Summary                   | 14 Aug 95               | 04 Oct 95                                | 04 Oct 95                |

| <u>Milestone Name</u>   | <u>Planned<br/>Date</u> | <u>Approved<br/>Extension<br/>Status</u> | <u>Forecast<br/>Date</u> |
|---|-------------------------|--|--------------------------|
| <b><u>Landfill Leachate Collection Proposed Action Memorandum</u></b>           |                         |  |                          |
| Release Final Draft Proposed Action Memorandum for Public Comment               |                         | 25 Nov 94                                | 25 Nov 94                |
| Submit Final Responsiveness Summary and Proposed Action Memorandum to CDPHE/EPA |                         | 08 Mar 95                                | 12 Aug 98                |
| Release Final Responsiveness Summary and Proposed Action Memorandum             |                         | 22 Mar 95                                | 22 Mar 95                |

**November Work Activity Status**      The concurrent public and regulatory agency comment period for the Proposed Action Memorandum ended November 14, 1994. No public comments were received and eight comments were received from the regulatory agencies.

A meeting will be held with the regulatory agencies on December 8, 1994, to present management strategies for well abandonment and IHSS boundary definition and disposition of Phase I Investigative Derived Material.

The schedule for the integration of the OUs 1 and 2 sitewide treatment facility was not finalized. The collection of OU 7 seep water cannot begin until completion of the sitewide treatment facility is completed in the summer of 1995.

The Title II Design for the seep collection system was completed on November 16, 1994. Title II Design for the electrical routing was completed on November 23, 1994.

#### Technical Memoranda

##### Project

##### OU 7 - Present Landfill

TM

TM Title

TM Status

Revised Work Plan

Submitted the Draft TM to EPA/CDPHE for review: 23 May 94

Comments received: 01 July 94

Submitted the Final TM transmitted to EPA/CDPHE: 09 Sep 94

Approved by the regulatory agencies: 30 Sep 94

#### Planned Work for November

- The option analysis and conceptual design of the landfill closure will continue.

#### Problems

None

#### Open Items

None

## **2.IA INDUSTRIAL AREA (IA) OPERABLE UNITS (8, 9, 10, 12, 13, and 14)**

The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). Combining this work will result in improved oversight, coordination, and reduced costs.

### **Scope of Work**

**Changes This Period**                      None

### **Technical Approach**

**Changes This Period**                      None

### **IAG Milestone**

**Accomplishments**                      This information is listed in the IA OUs.

### **Future IAG Milestones Through FY 95**

Deliver reorganization proposal to regulatory agencies                      04 Nov 94

### **November Work Activity Status**

The review by the regulatory agencies continues on the draft IA Surface Water and Sediment Field Sampling Plan TM. As scheduled, comments were not received on November 16, 1994.

A proposal for a reorganization and reconfiguration of the IA OUs was completed on October 19, 1994, and was delivered to the regulatory agencies on November 4, 1994.

Final work packages for fiscal year 1995 for the IA OUs Closures were completed and received by November 10, 1994.

Review continues of the information submitted by the Environmental Evaluation subcontractor for the IA. Completion of the review is expected by the end of November 1994.

### **IA OUs Quality Assurance**

A surveillance was conducted of soil sampling activities in OUs along with escort duties.

An assessment was conducted of soil gas activities for OUs along with escort duties.

There was a review of the Statement of Work for several purchase orders. A discussion was held concerning the revision of specified Quality Assurance requirements. These discussions determined that revisions are not feasible.

The Work Plans for the OUs within the IA were reviewed.

An assessment was conducted of the field logbook data collection practice. No standard exists to evaluate compliance. This assessment helped to determine the information that should be recorded in the logbooks. EG&G is pursuing the development of a

procedure that addresses field logbooks and forms. This will improve the lack of consistency and content data that was indicated in the last DOE-HQ audit.

**IA IM/IRA Plan** - The Draft Responsiveness Summary was submitted to the regulatory agencies on October 28, 1994, ahead of the IAG schedule.

**Planned Work for December**

- Comments from the regulatory agencies will be incorporated into the proposal for the reorganization and reconfiguration of the IA OUs.

**Problems**

None

**Open Items**

The regulatory agency comments on the Draft IA Surface Water and Sediment Field Sampling Plan TM are pending.

## 2.8 OU 8 - 700 AREA

The 24 IHSSs that constitute OU 8 encompass separate sites inside and around the production area of the Rocky Flats Environmental Technology Site. Contamination sources within the various IHSSs include above-ground and underground tanks, equipment washing areas, and releases inside buildings that potentially affect areas outside the buildings. Contaminants from these sources may have been introduced into the environment through spills on the ground surface, underground leakage and infiltration, and, in some cases, through precipitation runoff. The chemical composition of the contaminants varies widely between the IHSSs, and ranges from low-level radioactive mixed wastes to nonradioactive organic and inorganic compounds.

OU 8 is within the Industrial Area (IA) at the Rocky Flats Environmental Technology Site and is being managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). Combining this work has resulted in improved oversight, coordination, and reduced costs.

**Scope of Work** None  
**Changes This Period**

**Technical Approach** None  
**Changes This Period**

|                        |                                       |           |
|------------------------|---------------------------------------|-----------|
| <b>IAG Milestone</b>   | Submit Draft Phase I RFI/RI Work Plan | 01 May 92 |
| <b>Accomplishments</b> | Submit Final Phase I RFI/RI Work Plan | 01 Dec 92 |

**Future IAG Milestones**  
**Through FY 95**

| <u>Milestone Name</u>              | <u>Planned</u><br><u>Date</u> | <u>Approved</u><br><u>Extension</u><br><u>Status</u> | <u>Forecast</u><br><u>Date</u> |
|------------------------------------|-------------------------------|--|--------------------------------|
| Submit Draft Phase I RFI/RI Report | 14 Feb 94                     | Tolling Agreement                                    | 04 Nov 97                      |
| Submit Final Phase I RFI/RI Report | 12 Jul 94                     | Tolling Agreement                                    | 10 Feb 98                      |

**November Work Activity Status** The Draft Final TM #1, *Footings/Under Drains Data Compilation and Field Sampling Plan*, was delivered to regulatory agencies for review on November 23, 1994

Field work for the OU8 RFI/RI Stage 2 investigation began in October 1994 and is ongoing.

The following approximate percentage of samples were collected as part of the Stage 2 nonintrusive investigation: Surficial Soil, 53 percent; Vertical Profile, 0 percent; Asphalt/Concrete, 0 percent; Soil Gas, 20 percent; and Sodium Iodide Radiation Measurements, 0 percent. Overall, sampling activities are proceeding slightly ahead of schedule.

## Technical Memoranda

### Project

OU 8 - 700 Area

### TM #1

### TM Title

Footings/Under Drains Data Compilation and Field Sampling Plan,  
Draft Final

### TM Status

Projected date of submittal to EPA/CDPHE: 01 Dec 94

Actual date of submittal: 23 Nov 94

Date when EPA/CDPHE comments received: Pending

### Planned Work for December

- The Stage 2 field activities will continue.
- The regulatory agency comments on the Draft Final TM #1 that will be received in December 1994 will be addressed.
- Work will begin on the Final TM #1 scheduled for submittal in January 1995.

### Problems

None

### Open Items

None

## 2.9 OU 9 - ORIGINAL PROCESS WASTE LINES

This project involves the investigation and remediation of a series of tanks and associated process waste lines. The original process waste lines consisted of 35,000 feet of buried pipeline that transferred process wastes from production buildings to onsite treatment plants. A system of 60 designated pipe sections, 40 single and multiple storage tank sites, and three other areas of suspected process waste leakage is included in OU 9. The system was placed into operation in 1952, and additions were made to the system through 1975. The original system was replaced between 1975 and 1984 by the new process waste system. Some tanks and lines from the original system were incorporated into either the new process waste system or the fire water deluge collection system.

The original system is known to have transported or stored various aqueous process wastes containing low-level radioactive materials, nitrates, caustics, and acids. Small quantities of other liquids were also introduced in the system, including medical decontamination fluids, miscellaneous laboratory liquids, and laundry effluent. The RFI/RI Phase I Work Plan includes inspection and sampling of the tanks and pipelines that are accessible and soil sampling to determine the extent of contamination in the vadose zone. The soil sampling will be performed by installing test pits and boring where known or suspected releases occurred near pipe joints and valves, at approximately 100- to 200-foot intervals along the pipelines and by installing borings around the outdoor tanks. Soil characterization studies will determine the need for soil removal and/or treatment. The results of the Phase I RFI/RI will determine the need for interim and/or final remediation action.

OU 9 is within the IA at the Rocky Flats Environmental Technology Site and is being managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g., surficial soil sampling, in situ radiation surveys, and soil gas sampling). Combining this work has resulted in improved oversight, coordination, and reduced costs.

Scope of Work Changes This Period ☐ None

**Technical Approach** **None**  
**Changes This Period**

|                 |                                       |           |
|-----------------|---------------------------------------|-----------|
| IAG Milestone   | Submit Draft Phase I RFI/RI Work Plan | 08 Jun 90 |
| Accomplishments | Submit Final Phase I RFI/RI Work Plan | 26 Nov 91 |

## Future IAG Milestones Through FY 95

| <u>Milestone Name</u>                                  | <u>Planned Date</u> | <u>Approved Extension Status</u> | <u>Forecast Date</u> |
|--|---------------------|----------------------------------|----------------------|
| Submit Draft Phase I RFI/RI Report                     | 11 Apr 94           | Tolling Agreement                | 04 Jan 01            |
| Submit Final Phase I RFI/RI Report                     | 06 Sep 94           | Tolling Agreement                | 16 Sep 03            |
| Submit Draft Phase II RFI/RI Work Plan                 | 10 Mar 95           |                                  | 23 Jul 04            |
| Submit Draft Phase I Proposed IM/IRA Decision Document | 01 May 95           |                                  | 31 Oct 03            |
| Submit Final Phase II RFI/RI Work Plan                 | 07 Aug 95           |                                  | 01 Apr 05            |
| Submit Final Phase I Proposed IM/IRA Decision Document | 27 Sep 95           |                                  | 12 Jul 04            |

## November Work Activity Status

The Draft Final TM #1, *Volume II, The Field Sampling Plan for Pipelines*, was completed, and a Draft Final was submitted to the regulatory agencies for review.

The review of the OU 9 Draft Outside Tank Investigation Modification to the IA Health and Safety Plan was completed, and comments were incorporated. Signatures will be obtained and a controlled document will be released.

Discussions continued on tanks in and around Building 889. This includes sumps in the building as well as tanks outside of the building (T-40). The T-40 tanks are targeted for removal as an early action. The DOE is currently considering a Proposed Action Memorandum that could include all of these tanks as well as some of the underground pipelines used as waste lines.

A proposal for the implementation of the Stage I Outside Tank Investigation was reviewed. This proposal includes options that modify the Outside Tank Field Sampling Plan and perform the field investigation on Tanks T-8 and T-9. It was proposed that Tanks T-24 and T-32 remain active and the investigation of these tanks be deferred.

The operating procedure for tank and pipeline investigation, FO.28, is still under preparation. Additional modifications are still needed in order to meet the actual requirements of the tank investigation.

DOE received correspondence from EG&G that proposed the initiation of the field investigation of outside tanks without an approved Field Sampling Plan. Included in the correspondence was a proposal to address active pipelines in the OU 9 Field Sampling Plan for pipelines.

Training of subcontractor field personnel for the Stage I Outside Tank Investigation continued.

## Technical Memoranda

### Project

### OU 9 - Original Process Waste Lines

TM #1

TM Title

Field Sampling Plan - Original Process Waste Lines - Volume I, Part A, Outside Tanks

TM Status

When preparation was concluded: Jan 94

Projected date of submittal to EPA/CDPHE: Mar 94

Actual date of submittal: 15 Mar 94

Date EPA/CDPHE comments received: 11 Apr 94

TM #1

TM Title

Field Sampling Plan - Volume II, Part A, Outside Pipelines

TM Status

When preparation was concluded: Aug 94

Projected date of submittal to EPA/CDPHE: Nov 94



Actual date of submittal: Nov 94

Date EPA/CDPHE comments received: To be determined

#### **Planned Work for December**

- The following activities for the Stage I Outside Tank Investigation will continue: Train field personnel, subcontract field work, continue with field work preparations that include permitting, finalizing the Health and Safety Plan, and updating the Project Management Plan.
- Signatures will be obtained and the final controlled draft of the draft modification to the IA Health and Safety Plan will be released.
- The regulatory agency comments on TM #1, *Volume II, The Field Sampling Plan for Pipelines*, will be incorporated.
- The Operating Procedure, FO.28, for tank and pipeline investigation will be finalized.

#### **Problems**

The delay by the regulatory agencies in the approval of TM #1, *Field Sampling Plan - Original Process Waste Lines - Volume 1, Part A, Outside Tanks*, has created field activity delays.

Active tanks in OU 9 continue to be a major issue between DOE and CDPHE. The DOE is still attempting to get a resolution to this problem, and the CDPHE approval of work contained in the Field Sampling Plan was already submitted without going to dispute resolution. DOE continues to attempt to resolve issues with CDPHE concerning the Tanks T-8, T-9, T-24, and T-32. A letter from DOE was sent to CDPHE on October 20, 1994, in order to resolve this issue. A response has been received and is currently under evaluation.

Efforts are in progress to subcontract the portion of the OU 9 Outside Tank Investigation that CDPHE did not take issue with in order to reduce schedule delays. If the approval of TM #1, *Field Sampling Plan - Original Process Waste Lines - Volume 1, Part A, Outside Tanks*, does not occur in approximately the next three months, the subcontractor's proposal will be withdrawn and a new proposal will be needed. Even if approval is granted in the next three months, delays may occur because of conflicts with scheduling.

New requirements for training have delayed the training schedule for the OU 9 Outside Tank Investigation.

#### **Open Items**

TM #1, *Field Sampling Plan - Original Process Waste Lines - Volume 1, Part A, Outside Tanks*, has not been approved by the regulatory agencies.

## **2.10 OU 10 - OTHER OUTSIDE CLOSURES**

OU 10 is composed of 15 IHSSs scattered throughout the Rocky Flats Environmental Technology Site. Six of the IHSSs are located in the Protected Area, two are located in the buffer zone near the present landfill, and the remaining IHSSs are located near various buildings throughout the Rocky Flats Environmental Technology Site. The types of wastes and contaminants identified at these sites include pondcrete/saltcrete storage, diesel and fuel spills, and heavy metal contamination. A Draft and Final TM will be developed that will summarize the nonintrusive portion of the OU 10 field work. Other IHSS-specific intrusive activities are scheduled for FY 94.

OU 10 is currently being managed collectively with the other IA OUs (8, 9, 12, 13, and 14). All of these OUs are being investigated collectively because of the similarities in the field work for these OUs (e. g., surficial soil sampling, in situ radiation surveys, and soil gas sampling). Combining this work has resulted in improved oversight, coordination, and reduced costs.

**Scope of Work** None  
**Changes This Period**

**Technical Approach** None  
**Changes This Period**

|                                      |                                       |           |
|--------------------------------------|---------------------------------------|-----------|
| <b>IAG Milestone Accomplishments</b> | Submit Draft Phase I RFI/RI Work Plan | 27 Nov 91 |
|                                      | Submit Final Phase I RFI/RI Work Plan | 01 May 92 |

**Future IAG Milestones Through FY 95**

| <u>Milestone Name</u>                                  | <u>Planned Date</u> | <u>Approved Extension Status</u> | <u>Forecast Date</u> |
|--|---------------------|----------------------------------|----------------------|
| Submit Draft Phase I RFI/RI Report                     | 25 Aug 94           | Tolling Agreement                | 09 Nov 20            |
| Submit Final Phase I RFI/RI Report                     | 30 Jan 95           | Tolling Agreement                | 27 Jul 21            |
| Submit Draft Phase I Proposed IM/IRA Decision Document | 26 May 95           |                                  | 26 Feb 18            |
| Submit Draft Phase II RFI/RI Work Plan                 | 27 Jun 95           |                                  | 25 May 17            |

**November Work Activity Status** Efforts continued towards completion of the Preliminary Draft TM #1 for OU 10. Emphasis was placed on the resolution of the Geographic Information System and the High Purity Germanium Detection issues.

DOE comments on the Preliminary Draft TM #1 are being addressed and a response to these comments will be completed in December 1994.

On November 10, 1994, the majority of the validated OU 10 analytical data that was outstanding was received.

The sodium iodide surveys were conducted at various OU 10 IHSSs. The results of the sodium iodide surveys will be included in the Draft Final of TM #1.

As part of the Rocky Flats Environmental Technology Site Monthly Public Presentation, the OU 10 Proposed Action Memorandum, which entails scope for the removal action of the underground storage tanks in Building 443, was presented on November 16, 1994.

#### **Technical Memoranda**

A revised schedule was developed for preparation and delivery of the Draft Final and Final OU 10 Phase I Nonintrusive TM. The new dates for delivery of the Draft Final and Final TMs are December 6, 1994, and February 10, 1995, respectively.

#### **Planned Work for December**

- The validation of the remainder of the sample analytical data will be completed.
- DOE comment responses to the Preliminary Draft TM #1 will be completed.
- The sodium iodide surveys will be completed.
- The comment period for the OU 10 Proposed Action Memorandum ended November 29, 1994. The comments from the public and the regulatory agencies will be collected, and in preparation of a DOE comment responsiveness summary, the resolution of these comments will begin.

#### **Problems**

Current information indicates that the Rocky Flats Compliance Agreement will not be negotiated before the expiration of the Tolling Agreement on January 31, 1995. It is conceivable that DOE will then begin accruing stipulated fines and penalties associated with the remaining Table 6 IAG milestones.

#### **Open Items**

None

## **2.11 OU 11 - WEST SPRAY FIELD**

The West Spray Field is located within the Rocky Flats Environmental Technology Site buffer zone immediately west of the 130 Trailer complex. The West Spray Field was in operation from April 1982 to October 1985. During operation, excess liquids from Solar Evaporation Ponds 207B North and Center (contaminated groundwater in the vicinity of the ponds and treated sanitary sewage effluent) were pumped periodically to the West Spray Field for spray application. The spray field boundary covers an area of approximately 105 acres, 38 of which received direct application of solar pond water. The RFI/RI process will entail field studies to investigate the presence or absence of hazardous constituents in soil and groundwater.

**Scope of Work** None  
**Changes This Period**

**Technical Approach** None  
**Changes this Period**

|                        |                                       |           |
|------------------------|---------------------------------------|-----------|
| <b>IAG Milestone</b>   | Submit Draft Phase I RFI/RI Work Plan | 08 Jun 90 |
| <b>Accomplishments</b> | Submit Final Phase I RFI/RI Work Plan | 02 Jan 92 |

### **Future IAG Milestones Through FY 95**

| <u>Milestone Name</u>                        | <u>Planned<br/>Date</u> | <u>Approved<br/>Extension<br/>Status</u> | <u>Forecast<br/>Date</u> |
|--|-------------------------|--|--------------------------|
| Submit Draft Phases (combined) RFI/RI Report | 20 Sep 94               | 20 Jul 95*                               | 19 May 95                |
| Submit Final Phases (combined) RFI/RI Report | 22 Feb 95               | 19 Sep 95*                               | 21 Jul 95                |
| Submit Draft Phase II RFI/RI Work Plan       | 21 Aug 95               | Deleted                                  | Deleted                  |

\* Revised according to the Process Improvement Proposal.

**November Work Activity Status** Work continues on the RFI/RI Report with the geological section nearly complete, and statistics are being performed on the percentage of analytical results that have been received.

All data have been received from the laboratories except for 2 percent of the water quality parameters and approximately 50 percent of the radionuclides.

### **Technical Memoranda**

Project OU 11 - West Spray Field

TM  
TM Title Revised Field Sampling Plan and Data Quality Objectives  
TM Status Submitted to EPA/CDPHE: 31 Mar 94  
TM approved.

**TM #1**  
**TM Title**  
**TM Status**

**Exposure Scenarios**  
**When preparation was concluded: Mar 94 (late)**  
**Projected date of submittal to EPA/CDPHE: 14 Dec 94**  
**Actual date of submittal: To be determined**  
**Date EPA/CDPHE comments received: To be determined**

**TM #2**  
**TM Title**  
**TM Status**

**Modeling**  
**When preparation was concluded: 22 Mar 94 (late)**  
**Projected date of submittal to EPA/CDPHE: 14 Dec 94**  
**Actual date of submittal: To be determined**  
**Date EPA/CDPHE comments received: To be determined**

**TM #3**  
**TM Title**  
**TM Status**

**Contaminants of Concern**  
**When preparation is concluded or estimated to be concluded:**  
**20 Sep 94**  
**Projected date of submittal to EPA/CDPHE: 09 Nov 94**  
**Actual date of submittal: To be determined**  
**Date EPA/CDPHE comments received: To be determined**

**TM #4**  
**TM Title**  
**TM Status**

**Toxicity**  
**When preparation is concluded or estimated to be concluded:**  
**10 Oct 94**  
**Projected date of submittal to EPA/CDPHE: 12 Dec 94**  
**Actual date of submittal: To be determined**  
**Date EPA/CDPHE comments received: To be determined**

**Planned Work for December**

- **Work on the Risk Assessment portion of the RFI/RI Report will begin.**

**Problems**

**The complete analytical results from this summer's field investigation in OU 11 have not been affected by a day for day slippage, but the accelerated milestone may be affected by the slippage if 100 percent of the analytical results for OU 11 have not been received by December 5, 1994.**

**Open Items**

**None**

## 2.12 OU 12 - 400/800 AREA

The 400/800 Area comprises assessment and remediation of the following 10 IHSSs within the 400/800 Area: Multiple Solvent Spills at the West and South Loading Dock Areas (IHSSs 116.1 and 116.2); Fiberglassing Areas North and West of Building 664 (IHSSs 120.1 and 120.2); Cooling Tower Ponds - northeast and southwest of Building 460 (IHSSs 136.1, and 136.2); Building 881 - Conversion Site (147.2); Radioactive Site - South Area (IHSS 157.2); Acid Leaks (2) (IHSS 187); and Multiple Acid Spills (IHSS 189).

The Phase I RFI/RI Work Plan, which includes both an Environmental Evaluation and a Human Health Risk Assessment, has been completed. Implementation of this Work Plan includes field work and sample analysis. After implementation, a Phase I RFI/RI Report will be prepared. A Phase II Investigation may be performed as necessary. An FS to determine the best methods to remediate the area will be conducted as part of the assessment.

Based on results obtained during the assessment phase of the project, remediation may consist of development and execution of a Remedial Action Plan. This process includes review and approval by the regulatory agencies, followed by a Record of Decision, release to the public, and implementation of the plan.

OU 12 is within the IA at the Rocky Flats Environmental Technology Site and is managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g., surficial soil sampling, in situ radiation surveys, and soil gas sampling). Combining this work will result in improved oversight, coordination, and reduced costs.

### Scope of Work Changes This Period

None

### Technical Approach Changes This Period

None

### IAG Milestone Accomplishments

Submit Draft Phase I RFI/RI Work Plan  
Submit Final Phase I RFI/RI Work Plan

08 May 92  
05 Oct 92

### Future IAG Milestones Through FY 95

| <u>Milestone Name</u>              | <u>Planned<br/>Date</u> | <u>Approved<br/>Extension<br/>Status</u> | <u>Forecast<br/>Date</u> |
|------------------------------------|-------------------------|--|--------------------------|
| Submit Draft Phase I RFI/RI Report | 20 Apr 94               | Tolling Agreement                        | 11 Mar 99                |
| Submit Final Phase I RFI/RI Report | 15 Sep 94               | Tolling Agreement                        | 17 Nov 99                |

### November Work Activity Status

Analysis of field data continues for TM #2, *Summary of the Nonintrusive Field Activities and the Intrusive Field Sampling Plan*.

In November 1994, the Global Positioning system was used to survey points where sampling occurred in OU 12.

Work continues on the tripod High Purity Germanium survey and the completion of the laboratory High Purity Germanium survey analysis.

**Technical Memoranda**

The Draft IA Surface Water and Sediment Field Sampling Plan was submitted to the regulatory agencies on October 26, 1994.

**Planned Work for December**

- The Summary of Nonintrusive Field Activities TM #2 will continue.
- Data analysis on the High Purity Germanium laboratory samples will continue.
- Laboratory analysis on the asphalt samples for OU-12 will continue.

**Problems**

None

**Open Items**

Comments from the regulatory agencies on Draft IA Surface Water and Sediment Field Sampling Plan are pending.

## 2.13 OU 13 - 100 AREA

Cleanup of the 100 Area comprises the assessment and remediation of 14 IHSSs: Chemical Storage - North, Middle, and South Sites (IHSSs 117.1, 117.2 and 117.3); Oil Burn Pit #1 (IHSS 128); Lithium Metal Destruction Site (IHSS 134); Waste Spills (IHSS 148); Fuel Oil Tank (IHSS 152); Radioactive Site - North Area (IHSS 157.1); Radioactive Site - Building 551 (IHSS 158); Waste Peroxide Drum Burial (IHSS 169); Solvent Burning Ground (IHSS 171); Valve Vault 12 (IHSS 186); Caustic Leak (IHSS 190); the Hydrogen Peroxide Spill (IHSS 191), and the Scrap Metal Site (IHSS 197).

Assessment will proceed in three steps. The first step, which has been completed, consists of preparing a Phase I RFI/RI Work Plan. The second step is the implementation of the Work Plan, in which field work and sample analysis will be conducted, data will be analyzed, and the Phase I RI Report will be prepared. When complete, the Phase I RI Report will include both an Environmental Evaluation and a Human Health Risk Assessment. The third step is a Feasibility Study which will determine the best method to remediate the area.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase of the project. This process includes review and approval by the regulatory agencies, followed by a Record of Decision, release to the public, and implementation of the plan.

OU 13 is within the IA at the Rocky Flats Environmental Technology Site and is managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g., surficial soil sampling, in situ radiation surveys, and soil gas sampling). Combining this work will result in improved oversight, coordination, and reduced costs.

Scope of Work  
Changes This Period                      None

Technical Approach  
Changes This Period                      None

|                 |                                       |           |
|-----------------|---------------------------------------|-----------|
| IAG Milestone   | Submit Draft Phase I RFI/RI Work Plan | 15 May 92 |
| Accomplishments | Submit Final Phase I RFI/RI Work Plan | 12 Oct 92 |

### Future IAG Milestones Through FY 95

| <u>Milestone Name</u>              | <u>Planned<br/>Date</u> | <u>Approved<br/>Extension<br/>Status</u> | <u>Forecast<br/>Date</u> |
|------------------------------------|-------------------------|--|--------------------------|
| Submit Draft Phase I RFI/RI Report | 08 Aug 94               | Tolling Agreement                        | 06 Jan 97                |
| Submit Final Phase I RFI/RI Report | 11 Jan 95               | Tolling Agreement                        | 11 Jun 97                |

November Work Activity Status      The OU 13 surficial soils data validation is 80 percent complete.

The Draft OU 13 TM #1, *Addendum to the Field Sampling Plan*, was received November 7, 1994, and transmitted to CDPHE and EPA on November 17, 1994. The history file has been reviewed for completeness, and the document was submitted to document control.



Work has begun on the review of results for inclusion in the OU 13 TM #2, *Results of Nonintrusive Field Investigations*.

Some elevated levels of organic compounds were detected in IHSS 117.2, and additional resampling was required. Multiple volumes of soil gas extractions are being conducted in order to minimize sampling effort.

Global Positioning System surveying has begun in OU 13.

## **Technical Memoranda**

### **Project**

### **OU 13 - 100 Area**

#### **TM #1**

#### **TM Title**

#### **TM Status**

#### **Addendum to Field Sampling Plan**

When preparation was concluded: Feb 94

Projected date of submittal to EPA/CDPHE: Feb 94

Actual date of submittal: 03 Mar 94

Date EPA/CDPHE comments were received: 16 May 94

A nonintrusive TM will be prepared in FY 95 that summarizes the nonintrusive field work and recommends Stage II activities for the remedial investigation intrusive field work.

#### **Planned Work for December**

- As results from this summer's field work is available, data analysis will continue.
- Work will continue on TM #2, *Results of Nonintrusive Field Activities in OU 13*.
- Based on availability of crews and completion of sampling in OU 8, soil gas investigations will continue.

#### **Problems**

None

#### **Open Items**

The issuance of Operating Procedure FO.28, Tank and Pipeline Investigations, continues.

## 2.14 OU 14 - RADIOACTIVE SITES

Work at the Radioactive Sites comprises the assessment and remediation of eight IHSSs: Radioactive Site - 700 Area Site #1 and Site #2 (IHSS 131); Radioactive Soil Burial - Building 334 Parking Lot and Soil Dump Area (IHSSs 156.1); Building 444 Parking Lot (IHSS 160) and Building 664 (IHSS 161); and Radioactive Site - 700 Area Site #2 (IHSS 162); and Radioactive Sites - 800 Area which includes the Concrete Slab, Building 886 Spills; and the Building 889 Storage Pad (IHSSs 164.1, 164.2, and 164.3). In 1991, one of two Soil Dump Area IHSSs (156.2) was deleted from OU 14 and added to OU 6.

Assessment will proceed in three steps. The first step, which has been completed, consists of preparing a Phase I RFI/RI Work Plan. The second step is the implementation of the Work Plan, in which field work and sample analysis will be conducted, data analyzed, and the Phase I RI Report will be prepared. When complete, the Phase I RI Report will include both an Environmental Evaluation and a Human Health Risk Assessment. The third step is a Feasibility Study which will determine the best method to remediate the area.

Remediation will consist of development and execution of a Remedial Action Plan based on results obtained during the assessment phase and FS of the project. This process includes review and approval by EPA and CDPHE followed by a Record of Decision, release to the public, and implementation of the plan.

OU 14 is within the IA at the Rocky Flats Environmental Technology Site and is managed collectively with the other OUs that are within the IA. The IA OUs consist of OUs 8, 9, 10, 12, 13, and 14. All of these OUs are being investigated collectively because of similarities in the field work for these OUs (e. g., surficial soil sampling, *in situ* radiation surveys, and soil gas sampling). Combining this work will result in improved oversight, coordination, and reduced costs.

Scope of Work  
Changes This Period

None

Technical Approach  
Changes This Period

None

IAG Milestone  
Accomplishments

Submit Draft Phase I RFI/RI Work Plan  
Submit Final Phase I RFI/RI Work Plan

26 Jun 92  
19 Oct 92

Future IAG Milestones  
Through FY 95

| <u>Milestone Name</u>              | <u>Planned<br/>Date</u> | <u>Approved<br/>Extension<br/>Status</u> | <u>Forecast<br/>Date</u> |
|------------------------------------|-------------------------|--|--------------------------|
| Submit Draft Phase I RFI/RI Report | 20 Dec 94               | Tolling Agreement                        | 23 Apr 97                |
| Submit Final Phase I RFI/RI Report | 23 May 95               |  | 29 Sep 97                |

November Work Activity Status

Surficial sampling in OU 14 continues. Sampling in IHSS 160, 161, and 164.1 is completed. Sampling in the following IHSSs is complete as follows: IHSS 156.1 - 93 percent, IHSS 162 - 50 percent, IHSS 131 - 93 percent, IHSS 164.2 - 99 percent, and IHSS 164.3 - 96 percent. Overall the surficial soils sampling program is approximately 94 percent complete.

**Technical Memoranda**

A nonintrusive TM that summarizes the nonintrusive field work and recommends Stage II activities for the RI intrusive field work will be prepared in FY 95.

**Planned Work for December**

- The surficial soils survey will be completed.
- Data analysis will begin on data collected during this field season.
- The Global Positioning System survey activities will begin.

**Problems**

None

**Open Items**

None

## **2.15 OU 15 - INSIDE BUILDING CLOSURES**

OU 15 comprises of the following six IHSSs:

- IHSS 178, Building 881 - Drum Storage Area
- IHSS 179, Building 865 - Drum Storage Area
- IHSS 180, Building 883 - Drum Storage Area
- IHSS 204, RCRA Unit 45, Building 447 - Original Uranium Chip Roaster
- IHSS 211, RCRA Unit 26, Building 881 - Drum Storage Area
- IHSS 217, RCRA Unit 32, Building 881 - Cyanide Bench-Scale Treatment

Closure Plans for the IHSSs were submitted to CDPHE during 1988 and 1989. The IHSSs were also included in the IAG. During scoping meetings in April 1992 for the Phase I RFI/RI Work Plan, EPA, CDPHE, and DOE agreed to combine the Closure Plan and RFI/RI processes. In effect, the Clean Closure Performance Standard (6 CCR 1007-3 Part 265.111) will serve as the Applicable or Relevant and Appropriate Requirements for the OU 15 RFI/RI inside buildings for hazardous materials, and 29 CFR 1000.46 will serve as the Applicable or Relevant and Appropriate Requirements for the OU 15 RFI/RI inside buildings for radionuclides.

Drums containing solids and liquids were stored at the OU 15 IHSSs. Types of waste included oils, coolants, solvents containing chlorinated hydrocarbons (RCRA FO.01 and FO.02 wastes), and waste paints and metals contaminated with solvents. Hazardous constituents include chlorinated solvents, beryllium, and uranium. No known spills or releases occurred. The current focus is characterization of contamination associated with the OU 15 IHSSs inside buildings, and, if applicable, decontamination of the concrete floors and other facilities at the indoor RCRA units.

Scope of Work  
Changes This Period                      None

Technical Approach  
Changes This Period                      None

|                                  |                                       |           |
|----------------------------------|---------------------------------------|-----------|
| IAG Milestone<br>Accomplishments | Submit Draft Phase I RFI/RI Work Plan | 01 Jun 92 |
|                                  | Submit Final Phase I RFI/RI Work Plan | 26 Oct 92 |
|                                  | Submit Draft Phase I RFI/RI Report    | 25 Jul 94 |

### **Future IAG Milestones Through FY 95**

| <u>Milestone Name</u>              | <u>Planned<br/>Date</u> | <u>Approved<br/>Extension<br/>Status</u> | <u>Forecast<br/>Date</u> |
|------------------------------------|-------------------------|--|--------------------------|
| Submit Final Phase I RFI/RI Report | 04 Jan 95               |  | 04 Jan 95                |

**November Work Activity Status**      The preliminary draft Strategy Paper for OU 15 closure was completed and submitted for review. Revisions were made to the document from the review. This document will be used as the alternative comparison paper for the closure recommendation for OU 15.

Comments from the regulatory agencies were incorporated into the Final Phase RFI/RI Report in November 1994.

## Technical Memoranda

### Project

### OU 15 - Inside Building Closures

#### TM #1

#### TM Title

#### TM Status

#### Field Sampling Plan

When preparation is estimated to be concluded:

Projected date of submittal to EPA/CDPHE: 28 Feb 94

Actual date of submittal: 28 Feb 94

Date comments were received: Preliminary 17 Mar 94 (Formal 04 May 94, EPA, 07 Apr 94 CDPHE)

#### TM #2

#### TM Title

#### TM Status

#### Human Health and Risk Assessment

When preparation is estimated to be concluded:

Actual date the Final TM submitted to EPA/CDPHE: 28 Feb 94

Date comments were received: Preliminary 17 Mar 94  
(Formal 04 May 94, EPA, 07 Apr 94 CDPHE)

### Planned Work for December

- The Final Phase I RFI/RI Report will be delivered to the regulatory agencies.
- The approval of the Strategy Plan will be obtained..

### Problems

Preparation of the Final Phase I RFI/RI Report for OU 15, which was submitted on July 25, 1994, is continuing without EPA comments. In order for the comments to be official, they must be received by DOE from CDPHE.

### Open Items

None

## 2.16 SITEWIDE ACTIVITIES

Sitewide activities include several tasks that comprise a wide variety of plans, procedures, reports, studies, and activities required by the IAG and that apply to general Rocky Flats environmental restoration activities. Activities include, but are not limited to, the Health and Safety Plan, Sampling and Analysis Plan, Treatability Study deliverables, Background Study Plan, Groundwater Geochemistry, Risk Assessment, IA IM/IRA, hydrological characterization, Background Soils Study Plan, Decontamination Facilities, ER Waste handling facilities, groundwater monitoring, Decontamination and Decommissioning, and Program Management Support activities.

**Scope of Work** None  
**Changes This Period**

**Technical Approach** None  
**Changes This Period**

|                        |   |           |
|------------------------|---|-----------|
| <b>IAG Milestone</b>   | Submit Draft Background Study Report (Water)  | 15 Dec 89 |
| <b>Accomplishments</b> | Submit Draft Background Study Report (Soils)  | 15 Dec 89 |
|                        | Submit Draft Community Survey Plan  | 23 Jan 90 |
|                        | Submit Final Community Survey Plan  | 22 Mar 90 |
|                        | Submit Draft Health and Safety Plan   | 15 Aug 90 |
|                        | Submit Draft Quality Assurance Project Plan   | 29 Aug 90 |
|                        | Submit Draft Standard Operating Procedures  | 29 Aug 90 |
|                        | Submit Draft Plan for Prevention of Contaminant Dispersion                            | 19 Sep 90 |
|                        | Submit Draft Treatability Study Plan  | 21 Sep 90 |
|                        | Submit Draft Community Relations Plan   | 01 Nov 90 |
|                        | Submit Final Health and Safety Plan   | 12 Nov 90 |
|                        | Submit Revised Background Study Report  | 21 Dec 90 |
|                        | Submit Final Community Relations Plan   | 22 Jan 91 |
|                        | Submit Final Quality Assurance Project Plan   | 01 Mar 91 |
|                        | Submit Final Standard Operating Procedures  | 01 Mar 91 |
|                        | Submit Draft Radionuclides Discharge Limits Plan                                      | 05 Apr 91 |
|                        | Submit Community Relations Plan Responsiveness Summary                                | 21 Jun 91 |
|                        | Submit Final Treatability Study Plan  | 03 Jun 91 |
|                        | Submit Final Plan for Prevention of Contaminant Dispersion                            | 22 Jul 91 |
|                        | Submit Final Plan Discharge Limits Radionuclides                                      | 16 Sep 91 |
|                        | Submit Final Plan for Prevention of Contaminant Dispersion and Responsiveness Summary | 25 Nov 91 |
|                        | Submit Draft Historical Release Report  | 08 Jan 92 |
|                        | Submit Responsiveness Summary for Radionuclides Discharge Limits Plan                 | 31 Jan 92 |
|                        | Submit Final Historical Release Report  | 03 Jun 92 |
|                        | Submit Annual Treatability Study Report   | 08 Mar 93 |
|                        | Submit Sitewide Annual Treatability Study   | 04 Mar 94 |
|                        | Draft IA IM/IRA Decision Document   | 23 Mar 94 |
|                        | Submit Draft IA IM/IRA Responsiveness Summary   | 28 Oct 94 |

**Future Milestones  
Through FY 95**

| <u>Milestone Name</u>                                  | <u>Planned<br/>Date</u> | <u>Approved<br/>Extension<br/>Status</u> | <u>Forecast<br/>Date</u> |
|--|-------------------------|--|--------------------------|
| Submit Draft Final IA IM/IRA Responsiveness<br>Summary | 23 Aug 94               | 23 Nov 94                                | 02 Nov 94                |
| Submit Final IA IM/IRA Decision Document               | 23 Aug 94               | 23 Nov 94                                | 23 Nov 94                |
| Submit Sitewide Annual Treatability Study              | 14 Mar 95               |  | 14 Mar 95                |

**November Work Activity Status      Sitewide Activities**

**Sitewide Treatability Studies**

**Removal of Actinides from Soil Treatability Study -** Magnetic adsorption experiments were set up, and samples from previous experiments were submitted to the laboratory for analysis.

A reevaluation of the Work Plan is under way to ensure all data gaps affecting the FS are addressed and to minimize data duplication.

**High Gradient Magnetic Separation -** DOE started a review of the final Draft Treatability Study Report on November 7, 1994.

**Solvent Extraction -** Analytical results on the Solvent Extraction Phase II tests were received on November 14, 1994, and are undergoing review. The analytical results on the Solvent Extraction Phase II tests were completed in November 1994.

**Physical Separation Chemically Enhanced Steam Stripping -** DOE completed the comment period on the Draft Chemically Enhanced Steam Stripping Phase I Treatability Studies Report on November 18, 1994, and the final report is scheduled to be issued to the regulatory agencies on December 8, 1994. High temperature column testing activities continue at the Los Alamos National Laboratory. Preliminary data on some of the high temperature experiments are expected by December 6, 1994. All of the Draft Chemically Enhanced Steam Stripping Treatability Study activities are on schedule.

**Annual Treatability Study -** The first Draft Annual Treatability Study Report was reviewed by EG&G in November 1994.

**Bioremediation -** To date, DOE has not commented on the Bioremediation Phase I and II Treatability Study Reports which may delay the issuance of the final reports.

The revised scope and schedule for the bioremediation project were developed, and DOE reviewed and commented on the scope and

schedule in November 1994. A meeting was scheduled for DOE and EG&G to discuss OU 2 and Sitewide activities and plans.

#### **Other Sitewide Operations**

**Community Relations** - For the month of November, 1994, Community Relations was involved in the development of the OU 4 public involvement strategy. Community Relations prepared the presentation on the OU 10 Proposed Action Memorandum document for the November 16, 1994, monthly meeting.

**Surface Water Management -Onsite Water Control Drainage Repairs & Improvements** - Approximately 400 vendor produced maps needed for final distribution of the 38 Drainage Repairs and Improvements Plan copies have been received, and the distribution of the plan will be completed.

EG&G has developed additional design details for the South Walnut Creek Flood Prevention Project Alternative Number 5. This additional scope detail was based partly upon a field walkdown and review of potential interactions with the Sewage Treatment Plant Upgrades Project. A meeting was held to review the revised draft cost estimate for the Alternative Number 5 and to also review the engineering scope that was developed for Alternative Number 1.

A meeting was held among EG&G personnel to discuss and make OU personnel aware of flooding problems that would lead to sediment transport from the upper to the lower ponds, to discuss drainage projects aimed at significantly reducing the probability of this sediment transport, and to discuss how these drainage projects may interact with the OU 6 remediation activities and plans.

**Terminal Dam Geotechnical Analysis Completion** - The Final Geotechnical Analysis Report for Dam Upgrades (Dams A-4, B-5, and C-2) was completed.

**South Interceptor Ditch Repair Project** - A draft scope of work that requested the assistance of the United States Fish and Wildlife Service in the development of offsite wetland mitigation projects has been prepared. Budget support plans to support the initial United States Fish and Wildlife Service effort of defining potential offsite wetland mitigation areas and the eventual purchase of offsite wetland mitigation acreage have been developed. This effort supports several Onsite Water Management projects as well as OU remediation efforts.

A new project schedule for the South Interceptor Ditch Repair Project has been drafted. This schedule will be finalized once verification and additional input from supporting organizations has been received. EG&G personnel toured the proposed construction area where a cap will be placed on the old landfill. It is estimated that this cap placement will eliminate the upper 20 percent of the South Interceptor Ditch and



will result in approximately a 10 percent reduction in the total South Interceptor Ditch Repair Project cost estimate.

All project descriptions have been completed as part of the process of rewriting the Drainage Systems Environmental Assessment. This effort supports both the South Interceptor Ditch Repair Project and future Drainage Improvements Projects.

**Building 991 Flood Proofing** - The EG&G National Environmental Policy Act Compliance Committee met and determined that the Building 991 Flood Proofing Project qualifies for a Categorical Exclusion.

#### **Planned Work for December**

##### **Sitewide Treatability Studies**

- **Removal of Actinides from Soil Treatability Study** - Efforts to reevaluation the Work Plan will continue.
- **Physical Separation Chemically Enhanced Steam Stripping** - Efforts will continue to deliver the Draft Chemically Enhanced Steam Stripping Phase I Treatability Studies Report to the regulatory agencies in December 1994. High temperature column testing activities will continue.
- **Bioremediation** - Efforts will continue to complete comments on the Bioremediation Phase I and II Treatability Study Reports.

##### **Other Sitewide Operations**

- **Community Relations** - Normal operations will continue.
- **South Interceptor Ditch Repair Project** - Finalize the new project schedule for the South Interceptor Ditch Repair Project.

#### **Problems**

**Bioremediation** - The final reports of the Bioremediation Phase I and II Treatability Study Reports may be issued late because comments have not been received.

#### **Open Items**

None

### **SECTION 3.0 ROUTINE ENVIRONMENTAL MONITORING**

The following generalized sampling schedule for Routine Environmental Monitoring is provided as requested in Section 210 of the IAG. Detailed quarterly monitoring schedules are prepared in advance and are available to EPA and CDPHE upon request from the Environmental Management Department and EG&G Rocky Flats, Inc. The schedules are lengthy, therefore, they are not reproduced here. An EPA- or State-authorized representative may make arrangements to observe field work and obtain split or duplicate samples.

#### **3.1 SURFACE WATER AND SEDIMENTS**

Each of the Surface Water Stations (approximately 20 stations) is sampled quarterly.

Each of the Sediment Stations (approximately 10 stations) is sampled quarterly.

Each surface water and sediment sample is analyzed for the following parameters:

Contract Laboratory Program Target Compound List Volatile Organic Analysis  
Metals Contract Laboratory Program Target Analysis List and Non-Target Analysis List  
Field Parameters  
Specific Conductivity  
Dissolved Oxygen  
Major Anions  
Radionuclides  
Temperature  
Total Dissolved Solids/Total Suspended Solids  
pH  
Nutrients

Additionally, sediment samples are analyzed for Contract Laboratory Program-Semi Volatile Organic Analysis and Contract Laboratory Program-Pesticides/polychlorinated biphenyls Herbicides-619.

#### **3.2 SOILS**

Each of the soil stations (located at 1- and 2-mile radii from the site center) is sampled annually.

Each soil sample is analyzed for plutonium and americium.

#### **3.3 GROUNDWATER**

A total of 345 groundwater stations will be in the groundwater monitoring program in the fourth quarter of 1994. This amount is down from 390 stations in the third quarter of 1994. After review of the 1993 Well Evaluation Report, the regulatory agencies determined that 62 stations should be eliminated from the groundwater monitoring program. Seventeen other regulatory agency listed stations have been previously eliminated from the program because the wells were either dry for eight quarters or were abandoned.

As of November 1, 1994, there were 156 groundwater stations sampled. There are approximately 537 quarterly water level measurements this quarter. All water level measurements have been taken. Approximately 215 monthly water level measurements are scheduled this quarter. Eleven weekly water level measurements are ongoing.

Radiochemical Parameters

Gross Alpha  
Gross Beta  
Plutonium  
Americium  
Strontium  
Tritium  
Uranium  
Cesium

Inorganic Parameters

Nitrate/Nitrite  
Total Phosphorous  
Ortho-Phosphate  
Ammonia  
Total Dissolved Solids  
Chlorine  
Fluorine  
Sulfate  
Carbonate  
Bicarbonate  
Total Suspended Solids  
Dissolved Contract Laboratory Program and additional metals  
Cyanide  
Contract Laboratory Program Volatile Organic Constituents

Field Parameters

Specific Conductivity  
Temperature  
Turbidity  
pH

#### SECTION 4. SUBCONTRACTOR IDENTIFICATION

Subcontractors being used on the Rocky Flats ER Program and the work they are performing are identified on the following list as required by Paragraph 13 of the IAG.

| <u>OU</u> | <u>Project</u>        | <u>Subcontractor</u> | <u>Sub-Subcontractor</u> | <u>Work Description</u>  | <u>Start Date</u> |
|-----------|-----------------------|----------------------|--------------------------|--|-------------------|
| 1         | Assessment            | Dames & Moore        |                          | CMS/FS Report  | Jan 92            |
| 1         | Remediation           | Resource Tech.       |                          | B-891 Treatment System Operations Group, Inc. (RTG)  |                   |
| 2         | Assessment            | Woodward-Clyde       |                          | OU 2 RFI/RI Work Plan (alluvial and bedrock) and RI field work (drilling, well completion/development) | Feb 92            |
| 2         | Assessment            | Woodward-Clyde       | Layne                    | OU 2 RFI/RI Work Plan (bedrock), surficial soils   | Mar 93            |
| 2         | Remediation           | RTG                  |                          | Installation and operation of the water treatment system for South Walnut Creek Phase of OU 2 IRA      | Jan 91            |
| 2         | Soil Vapor Extraction | Woodward-Clyde       |                          | Operation of Soil Vapor Extraction   | 1993              |
| 3         | Assessment            | CH2M Hill            |                          | RI Report  | Apr 92            |
| 4         | Remediation           | HNUS                 | Halliburton              | Demobilize   | Sep 91            |
| 4         | Assessment            | Parsons/Eng Science  | Rust I&E                 | Implement the Phase I RFI/RI Work Plan, includes drilling, sampling radiation surveys, etc.            | Aug 92            |
| 4         | Remediation           | Parsons/ Eng Science |                          | Development of IM/IRA Decision Document and conceptual design  |                   |
| 4         | Remediation           | ERM-Rocky Mountain   | Geraghty & Miller        | Post-closure monitoring plan   | Nov 93            |
| 4         | Remediation           | HNUS                 |                          | Develop Treatability Study for Pondcrete   | Aug 94            |
| 4         | Remediation           | HNUS                 |                          | Develop Treatability Study and Conceptual Design for Pond Sludge Processing                            | Aug 94            |

| <u>OU</u> | <u>Project</u> | <u>Subcontractor</u>   | <u>Sub-Subcontractor</u>                  | <u>Work Description</u>  | <u>Start Date</u> |
|-----------|----------------|--|---|--|-------------------|
| 5         | Assessment     | ASI<br>Blackhawk Geo<br>Walsh<br>& Assoc.<br>Layne Envir. Service<br>S. M. Stoller<br>Adv. Terra Testing | Dames & Moore<br>Utility Mgmt.<br>Service | Implementation of OU 5<br>Work Plan (excluding<br>EE)  | Jun 92            |
| 5         | Assessment     | S. M. Stoller  |   | Implementation of<br>Environmental<br>Evaluation section of<br>OU 5 Work Plan                            | Sep 92            |
| 6         | Assessment     | Woodward-Clyde<br>Geo Envir  | Lane, Ogden,                              | OU 6 RFI/RI Work Plan<br>and Quality<br>Assurance Addendum   | Aug 92            |
| 6         | Assessment     | S. M. Stoller  |   | Implementation of EE<br>section of OU 6 Work<br>Plan   | Sep 92            |
| 7         | Assessment     | S. M. Stoller  | Walsh & Assoc.                            | OU 7 revised Work Plan<br>development and<br>implementation. IM/IRA<br>Decision Document<br>development. | Nov 92            |
| 8         | Assessment     | Jacobs Eng.  | Walsh & Assoc.                            | Implement the Phase I<br>RFI/RI Work Plan for<br>nonintrusive field work<br>for the IA OUs               | Aug 93            |
| 9         | Assessment     | Jacobs Eng.  | Walsh & Assoc.                            | Implement the Phase I<br>RFI/RI Work Plan for<br>nonintrusive field work<br>for the IA OUs               | Aug 93            |
| 10        | Assessment     | Jacobs Eng.  | Walsh & Assoc.                            | Implement the Phase I<br>RFI/RI Work Plan for<br>nonintrusive field work<br>for the IA OUs               | Aug 93            |
| 11        | Assessment     | S. M. Stoller  |   | Implement the RFI<br>field work and report<br>writing  | Jan 94            |
| 12        | Assessment     | Jacobs Eng.  | Walsh & Assoc.                            | Implement the Phase I<br>RFI/RI Work Plan for<br>nonintrusive field work<br>for the IA OUs               | Aug 93            |

| <u>OU</u> | <u>Project</u> | <u>Subcontractor</u>      | <u>Sub-Subcontractor</u> | <u>Work Description</u>   | <u>Start Date</u> |
|-----------|----------------|---------------------------|--------------------------|---|-------------------|
| 13        | Assessment     | Jacobs Eng.               | Walsh & Assoc.           | Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs   | Aug 93            |
| 14        | Assessment     | Jacobs Eng.               | Walsh & Assoc.           | Implement the Phase I RFI/RI Work Plan for nonintrusive field work for the IA OUs   | Aug 93            |
| 15        | Assessment     | ERM-Rocky Mtn.            | G. S. Miller, Inc.       | Implementation of the RFI/RI Work Plan  | Mar 93            |
| SW        | HRR            | IT Corporation            | Doty & Assoc.            | Prepare HRR   | Feb 91            |
| SW        | Adm. Record    | QuantaLex                 |                          | Maintain IAG Administrative Record  | Oct 90            |
| SW        | Geo. Char.     | Jacobs Eng                |                          | Well Abandonment and Replacement  | Mar 93            |
| SW        | Geo. Char.     | Colorado State University |                          | Support master's thesis of Structural Geology, of Front Range Area near Rocky Flats | Nov 91            |
| SW        | Geo. Char.     | S. M. Stoller             |                          | Prepare 1992 Annual RCRA Report and Addendum  | Jan 93            |
| SW        | Geo. Char.     | Colorado School of Mines  |                          | Masters-level training program in Engineering Science and Engineering               | Aug 92            |
| SW        | Geo. Char.     | Woodward-Clyde            |                          | Support for the Soil Water Monitoring System  | Feb 93            |
| SW        | Geo. Char.     | Colorado State University |                          | Sequential Extraction   | Apr 92            |
| SW        | Geo. Char.     | University of Colorado    |                          | Soil Monitoring Vadose Zone   | Jun 92            |
| SW        | Geo. Char.     | S. M. Stoller             |                          | Spatial Analysis/Computer Support   | Mar 93            |
| SW        | Geo. Char.     | Woodward Clyde Water      | SAIC/Wright              |   | Jan 93            |
| SW        | Monitoring     | IT Corporation            |                          | Analytical Services for groundwater, surface water, and sediment                    | Jul 90            |

| <u>OU</u>    | <u>Project</u> | <u>Subcontractor</u> | <u>Sub-Subcontractor</u> | <u>Work Description</u>   | <u>Start Date</u> |
|--------------|----------------|----------------------|--------------------------|---|-------------------|
| SWQA Support |                | SAIC                 |                          | Develop and implement QA program and field operations oversight | Dec 90            |
| PM Support   |                | S. M. Stoller        |                          | Program Management Support                                      | Oct 92            |
| PMQA Support |                | SAIC                 |                          | Provide QA/QC support to ER Program                             | Nov 92            |

## ACRONYMS

|        |   |
|--------|---|
| CDPHE  | Colorado Department of Public Health and Environment                  |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CMS    | Corrective Measures Study   |
| DOE    | U. S. Department of Energy  |
| EPA    | U. S. Environmental Protection Agency                                 |
| ER     | Environmental Restoration   |
| FS     | Feasibility Study   |
| FY     | Fiscal Year   |
| IA     | Industrial Area   |
| IAG    | Interagency Agreement   |
| IHSS   | Individual Hazardous Substance Site                                   |
| M      | Interim Measure   |
| IRA    | Interim Remedial Action   |
| IRAP   | Interim Remedial Action Plan  |
| OU     | Operable Unit   |
| RCRA   | Resource Conservation and Recovery Act                                |
| RFFO   | Rocky Flats Field Office  |
| RFI    | RCRA Facilities Investigation   |
| RI     | Remedial Investigation  |
| TM     | Technical Memorandum  |